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C. David Putters

by J. White

1788B

[1700?]



Give some Hebrew Words of this sort.

*Jesse, Hege, Mam-re,*

Give some Greek Words of the same sort.  
*Can-da-ce, Ca-ta-strophe, Getb-se-ma-ne,*  
*-ce, No-e, Phe-be, Phe-ni-ce, Sa-lo-me, Sal-*

Give some Examples out of Latin.

*Si-mi-le, Pra-mu-ni-re, Sci-re-fa-ci-as, and*  
*Word Ce-le-me-ne.*

Give some foreign Words in which *e* Final  
founded, because not found in the Original.  
*E* Final lengthens the syllable only in these  
*is, Tyre, Ke-nite, Shu-na-mite, and such like*  
*is as exprets the Country, or Quality of a*  
*m. 'Tis servile also in the Word Ode tho'*  
*in its Original.*

Give the fifth Exception.

Words ending in *-cre, -gre, and -tre*, do  
the *e* before the *r*, and sometimes are so

Give some examples of this kind.

*Acre* (aker) *lucre* (lucker) *sepulchre* (se-pul-  
*maugre* (mauger) *tygre* (tyger) *mitre* (miter)  
(center) *lustre* (luster).

What Quality has *e* Final after *c* and *g*?  
*E* Final softens *c* and *g*; as, *Lace, Race,*  
*Age, oblige, huge.*

Words in *e* Final sometimes take *s* after  
what use is that of?

WHITE, I.



M. Give Examples of Words, that are increased a Syllable by adding s at the End

Box, Boxes	To box, he boxes fairly
Witnesses, Witnesses	To oppress, a Tyrant of
Fish, Fishes	To punish, the Law pun
Arch, Arches	To parch, Fire parches
Assize, Assizes	To freeze it freezes
Carcase, Carcasses	To rise, the Sun rises
Age, Ages	To rage it rages
Grace, Graces	To place, he places
S. Nouns.	Verbs.

M. Give some Examples in this kind.

which makes a new syllable.  
Words ending in -ch, -sh, -fs, or x, tak  
increas'd a Syllable by the Addition of s :  
S. Words ending in -ce, -ge, -se or z  
ber of Syllables, or no?

M. Does the additional s increase the  
taketh.  
third Person singular; as, I take, he take  
them, it is abbreviated from -eth, and make  
S. If Verbs that End in e Final, take s



# A R T's

## Treasury of RARITIES : A N D

### Curious Inventions.

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#### In Two PARTS.

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PART. I. Containing the Mystery of dying Cloth, Silk, Stuffs, Hair, Feathers, Bone, Horn-work, Leather, &c. and to prepare and use them. To prepare and colour Skins of Leather, or gild them with Gold, Silver, or Lacquering, &c. To dye Bristles, Hair, Marble-Paper; to recover faded Colours in Cloth or Silk, and to take out Spots or Stains of Tar, Rosin, Grease, Oil, &c. and preserve them from Moth and Worms. To scower Silver and Gold Lace and Plate. To cement broken Glass and China, and to make Perfumes, &c. The Art of Drawing, Limning, Painting in Oil and Japaning, and tanning Leather, Etching, Graving, Writing, Gilding, Enamelling. To make sundry Colours, prepare Gums and Allom-Water; to thicken Linen, colour Maps and Pictures.

PART II. Containing the Generation of Metals, Natural and Artificial, and to Soder, Gild, and to harden and soften them. To cleanse and perfume Gloves, washing and starching Lawns, Sarsenets, Tiffany, and Lutestrings.

*With divers other* CURIOSITIES.

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The Fifth Edition.

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London: Printed for G. Conyers, at the Ring in Little-Britain. Price One Shilling.

## R E A D E R

R E A D E R,

**T**HIS Book hath been kindly received, as appears by this being the fifth Edition, in containing Variety of curious Inventions, useful, pleasant and profitable. The Multiplicity of Curiosities, cannot in so small a Compass acquaint you with, but a few I shall insert by Way of a Table, but many more thou wilt find in the Book, which I desire thou wouldst read over,

J. White

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# ART'S TREASURY;

## BEING

### Modern Curiosities.

#### CHAP. I.

*The Art and Mystery of dying Silks, Stuffs, Cloths, Feathers, &c. in the most curious and delightful Colours, with the Manner of ordering, making and preparing them, &c.*

SO pleasing to the Eyes of Mankind are the various Colours that we daily or frequently behold, that they in a Manner captivate and detain even the Fancy itself with Wonder and Delight. Wherefore I have thought it highly convenient, amongst the many stupendous Secrets and Curiosities this Book contains, as well tending to Profit as Pleasure, if duly practised, to place the Art of colouring, vulgarly called dying, in the beginning, as an Introduction to the rest, it being much wanted, and frequently coveted by publick and private Persons, to be known, and rightly managed. Wherefore for its better Improvement, take the following Rule and Directions.

*To prepare raw Silk.* Take your raw Silk and put it into a Bag, that it may not entangle; then to every Pound of this raw Silk, add a Quarter of a Pound of Soap, let this boil together two Hours,

then take it and cleanse it well, and it is ready for all sorts of Colours, being first allomed.

*Another Way to prepare raw Silk.* Take it, and smear it well and thoroughly, putting to every Pound of Silk, a Quarter of black or green Soap, put it into a Linen Bag, and let it boil six or seven Hours, then take out the Bag and cool it, that you may handle it the better, after this rince it, in a River or running Water for 15 Minutes. Beat the Water out very well, and then rince it again; then dry it, and it is ready to dye. Observe that this Preparation is absolutely necessary for all raw Silks before they can be dyed.

*How to allom the boiled Silk.* Take a Quarter of a Pound of Allom, to every Pound of Silk, melt it in a Skillet, when done, throw it into a Vessel or Tub of Water, into which put the Silk to steep twelve Hours or more. Observe carefully the just Proportion of Silk and Allom.

*To dye red Silk.* To prepare your liquor or suds right, take four handful of Wheat Bran to every Pound of Silk, then put it into 6 or 7 Gallons of Water, then boil them and pour the Liquor into a Tub, letting it stand 12 or 14 Hours, then clarify it, and take half of the Water, into which put 8 Ounces of Allom, 4 Ounces of Tartar of Red-wine, beaten to a fine Powder, and half an Ounce of Turmerick, finely pounded, boil them together a Quarter of an Hour, stirring them well; take the Kettle then off the Fire, and put the Silk immediately in, covering the Kettle very close, that the steam may not fly away, thus let it stand 3 Hours, and then take the Silk and rince it very well in cold Water, then upon a Block beat it very well and let it dry. This done take 4 Ounces of Galls, beat them small and put them into a Pail of River or Rain Water, and boil them 60 Minutes or somewhat more, then take the



the Kettle off the fire, and when it is so cool as your Hand can bear it, put in the Silk and let it lie an Hour, so take it out and let it dry.

*Silk to dye a Crimson Colour.* To your soaked or prepared Silk, put to every Pound one Ounce and a half of Cochineal, beat to fine Powder and sifted through a hair sieve, put it into the remaining pail of Liquor last mentioned, and hang it over the fire again, then put it with the Liquor into a Beef Kettle, covering it very close that no dirt may get in, and hang it over the fire again, and put to it an ounce and a half of white Arsnick, and of Tartar two Ounces and a half, both pounded fine, boil them together a Quarter of an Hour, then take it off the Fire, and when it hath stood a small Time put in the Silk, stirring it about well, that the colour be not variegated when the Liquor is cold, then wring the Silk out, and if it is not dyed enough, bang and dye again over the Fire, and put in the Silk, after it is beaten as before, when the Silk is dyed, it must be rinsed first in hot Suds, made of Water, and half an Ounce of Venice Soap, in Proportion to every Pound of Silk dissolved in it, and afterwards in cold River Water, then beat it upon a Block and hang it to dry, upon which being spread abroad, wound and managed according to custom, it becomes of a very good Crimson. If you would dye Crimson from a Violent Ground, you may abate a third Part of the Quantity of the Ingredients, that is a Pound of Silk so grounded requires but of Cochineal one ounce, as much of Arsnick and of Tartar two ounces.

*A Crimson dye.* When your Silk is well boiled, to every Pound of Silk take of crude Allom eight Ounces, when that is dissolved, lay the Silk in the Liquor one Night, the next Day rince it well, and afterwards died as followeth. Take a Kettle



of clear Water, and to every Pound of Silk, put in together of Cochineal two ounces and a half, beat very fine, of beaten Galls three Ounces. of Gum purified, an eighth Part of an Ounce of Turmerick, boil the Silk in this Liquor. Two Hours after this is done, let it remain 12 Hours, after this wring and dry it.

*Red, a cheap Way* To every Pound of Silk take one Pound of Brasiel boil it and shave it, then afterwards boil the Wood putting cold Water to it, then turn or wave it about, and take it out without wringing, and stir it about in the other Liquor, till it hath sufficiently taken the Tincture, then add a little pot-ashes, or put them in cold Water, and turn the Silk up and down in it, and when it is red enough rince and dry it.

*To colour or dye Wool, or woollen Cloth, a curious Red.* Take a considerable Quantity of Allom, and dissolve it in Water, wherein Bran has been boiled and strained out, putting the Cloth, Wool or Yarn to steep in it, which being well steeped, put it into other clear Water, heating it over a gentle Fire, putting thereto greening Weed two Pounds to four Gallons of Water, stirring it about, but not suffering it to boil; add more, a handful of unslacked Lime, and as much Wood-Ashes, stirring about the Materials, adding yet a like Quantity of Ashes, and a Pound of the Powder of Logwood, or Red-wood, and the like of Brazile, and so in three or four Hours Time a very fair Colour to your Satisfaction will be taken.

*To dye Linen, Thread, or Cloth red, &c.* Take a Pound of Sam-floure, and suffer it for the space of twenty-four Hours to soak in two Gallons of Water, heating over a gentle Fire; then add half a Pound of the Powder of Brazile, two Ounces of Vermilion, and an Ounce of Allom, dissolved in a Pint of fair Water.



*To dye a clear, or pleasant light Red.* Take Wheat Bran half a Peck, two Ounces of Allom, and boil them in four Gallons of fair Water, then through a fine hair Sieve Strain out the liquid Part, then dissolve in it half a Pound of Allom, and the like Quantity of white Tartar, and put in the Stuff, Cloth, &c intended for colouring, adding three Pound of Madder, and perfect the Colour in a moderate heat, without boiling.

*To dye Silk a sanguine Colour.* Take a Pound of Allom, and two Pound of greening Weed, bruise them well, and pour upon them fair Water; add then half a Pound of ground Brazile, heat them over the Fire, and put the Silk in some part of the liquid Matter, suffering it to seethe therein, and so renew it with the remainder, till you find your Colour take, and having so done three Times, rince it in Lee of Oak-bark, or Wood-ashes, and afterwards in Water.

*To dye a fair Blue.* Take white Silk, Stuff or Cloth that is white, and soak it in Water, then having wrung the Water out, add two Pound of Woold or Woad, a Pound of Indico, and three Ounces of Allom, and then gently heat and dissolve them in the Water, and so dip your Materials till you perceive the Colour has taken.

*To dye a Purple Colour.* Take a Silk, Stuff or Cloth that has already taken a blue, and dip it in Brazile and Allom-Water, at moderate heats; and you will soon perceive your Colour answer your Expectation.

*To dye Carnation.* Take a dry Purpure, and soak it a Night in Man's Urine; then take your Cloath that has been soaked in Allom-water, and dry'd again, and put it therein, suffer the Purpure beforehand to be twice seethed in fair Water; then set another Vessel by the Fire, and suffer the Cloth to take the Dye therein.

*To dye a deep red Carnation.* Take Linen and Woollen white, gall and allom it well, and take the Herb called by the *Dutch Foli*, which is to be found on the Banks of Ditches, to the Quantity of a Pound well dried; *Indian Lake* four Ounces, *Spanish Red* two Ounces; make of these and Allom Water a hot Liquor, and dip you Materials therein, at gentle Heats; three or four Times, and it will afford a curious Colour.

*To dye Silk Quoins a curious red.* Steep first your Silk in Allom Water, giving it a gentle heat, adding thereto in the heating, Bran-water; then take a Pound and a half of greening Weed, and so beat it up and put the Silk therein, but let it not seethe, then take it out and rince it in Ley, and after that in Water, adding some Powder of Logwood, and so heating it up a second Time, the Business will be perfected,

*To dye a fair Yellow.* Take the Stalks, Leaves and Seeds, &c. of Woad, the Roots being cut off, and lay them in soak in Ley of Wood-Ashes for the space of three Hours, after that seethe them in hot Water and Urine, and heat them up indifferently well, straining the liquid Part through a Sieve, adding to every two Pounds of Woad, two Pounds of Verdigrease, with the Ley already sod, stirring and well mixing it together in your Liquor, for the Space of three Hours, and so dip into it very hot at three or four times what you intend to colour.

*Another Way to dye a curious Purple, viz.* In case it be Silk you intend to dye, you must to one Pound of it, take 4 Ounces of Allom, and a Gallon of Water, dissolving the Allom therein over a gentle Fire, putting then the Silk therein, and suffering it to lie for the space of four Hours, then take of *Indian Lake* and *Indico*, each a Quarter of a Pound, and likewise a Quart of Urine, and  
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so heat them up into a Dye, adding about a handful of Cochineal.

*A curious green Water to make.* Take half an Ounce of Verdigrease. bruise it well, put thereto the Yolk of an Egg, and a few Blades of Saffron; then take of the Leaves of Spurge half a handful, bruise them with a Quarter of a Pint of Cinnamon, straining the liquid Part thro' a Cloth, and mingle it with the Materials before-mentioned, so thin that it may take, either in dying or painting.

*To make a black Water to dye Silk, Cloth, &c.* Take half a Pound of Nut galls, add to them a Pottle of Water, and an Ounce of Lamp black, with a handful of the rust or filings of Iron, beat them up adding half a Pound of Copperas, seethe them to half Consumption, adding then a Pint of Gum-Water, and so set it by for your Use, &c. and it will prove excellent good; the longer it is kept it is the better.

*To dye Linen or Silk, a Rose-red.* Take to every four Yards and a half, a Pound of Nut galls, and seethe them in fair Water unbruised, for the space of two Hours, when pouring out the liquid Part into another Vessel or Vat, put your Linen, &c. into it, and suffer it to soak for the Space of four Hours; then wring it dry, and heat it again in Allom and fair Water, adding half a Pound of Brazile Powder, and a Pound of greening Weed, and so by gentle Heats make up your Colour to the height.

*To dye a fair Green.* Take Bran-water and Allom, a Gallon of the former to a Pound of the latter, and seethe them up till the Allom is dissolved; then for about a Quarter of an Hour let your Silk or Cloth lie therein; then take more Bran water and a few handfuls of Woad, and put it therein, till it become a dark Yellow, then add Verdigrease

grease and Indico, of each half a Pound or more, or less of the one or the other, as you would have it lighter or darker.

*To dye a good Black.* Take two Pound of Galls, and half a Pound of Copperas, seethe them in Water over a gentle Fire, putting your Silk, Stuff or Cloth therein, and stirring it about; then hang it to dry, and prepare your Dye in this manner, *viz.* Take a large Vat, and put therein, three or four handfuls of Rye-Meal, and half so much of Swarf of the Grindstone, or Smith's Water, with two handfuls of Elder Bark, and the like Quantity of the Rust of Iron, and having suffered it to stand for the space of three Days, heat it up, and put your Materials therein.

*To make a thick Water to work on yellow Silk the best Way.* Take two Quarts of the best Varnish, add to it an Ounce of the Flower of Sulphur, half an Ounce of Camphire; then seethe it a while, and suffer it to cool. Straining it through a Cloth to take away the grosser part; and when you use it, let it be mixed with a small Quantity of Gum Arabick-water.

*So make a curious red Water.* Take two Quarts of fair Water, 4 Ounces of Gum Arabick, a Pound of fauncet Woad, seethe them together till half be consumed; and then taking it off, put into the remainder half an Ounce of *Spanish Green*, and about thirty Grains of Cochineal, and so use it as you see convenient.

*To make a curious blue Water for Silks, Stuffs, or Woollen.* Take three parts of Soap-boiler's Ashes, and one Part of unquench'd Lime, make of them a Ley, and suffer it well to settle, then add to the thinner Part taken off, a Pound of Boloemen, stirring them well together over a gentle Fire, adding a Pound of Woad and half a Pound of Indico, dipping what you intend to colour therein when it is very hot.



*To work on yellow Silk, white, grey, or azure Colour.* Take a Pottle of fair Water, and a fourth Part of Gum-Arabick, and half a Pottle of faucet Woad, an Ounce of Arsnick, and the like Quantity of Turmerick ground small, and see the them over a gentle Fire, putting a small Quantity of Grains therein, and so apply it to your Use as you see convenient.

*To make a red Water for white Silk or Wool, green, yellow, violet, or azure.* Take two Quarts of running Water, and an Ounce of Brazile, heat them up till half be consumed; then take it off the Fire, and put an Ounce of Grains, and a Quarter of an Ounce of Gum-Arabick, with a quarter of a Pound of Allom Powder, and suffering it to stand all Night, in the Morning you may use it.

*To make grey Florey.* Take Florey, and soak it twenty-four Hours, at the end of which, wring it through a Cloth; then take the Ashes of the Vine, and make a Ley with them, and spread the Florey for the space of two Hours upon a Table, and having put the Ley into three Vessels, take the Florey, and put it into one of the said Vessels, and so shift it to rest, putting before you dip your Linen, &c. Vinegar to it, and your Colour will be good.

*To dye Linen with Crampmede.* Use in this a Pound of Crampmede to three Ells of Linen, and put it to a Gallon and a half of Water, or so proportionable to the Quantity, and warm it over the Fire, till it appears ready to see the; then add to it two Ounces of Galls, and so put your Linen into it, and as often as you take it out, which must be frequent, wring it, then having a Pot of fair Water ready heated with Allom dissolved in it, put the Linen well wrung into it, and so rub it over at the taking out, and dry it; but if you would have it the darker Colour, then

it is requisite to have a Ley made with Limestones, or unslacked Chalk, &c.

*To dye Velvets, or other Things requiring it, the most curious of Blacks.* Take of Galls two Pound, Copperas half a Pound, Smith's Water a Gallon, the Powder of burnt Ivory an Ounce, and of Oak-Bark and Shoemakers Black ground to Powder, the like Quantity, and two Gallons of fair Water, mix them well together, and suffer them to stand in the Sun, or some other warm Place, for the space of thirty Days, with often stirring about; then put your Materials therein, and as often as you dip, hang to dry, and your Expectation will be answered.

*To make Bran Water much used in dying, &c.* Take half a Peck of Wheat-Bran, and two Gallons of fair Water, set them on the Fire, giving them a gentle heat, which being done, put half a Pound of Allom-Powder into it, and suffer it to stand a Week or more, with sometimes stirring it about before you use it.

*To dye Wool or Woollen Yarn.* Take four Pound of Wool or Yarn, two Pound of Woad, putting the Woad into a Kettle to two Gallons of Water; then throw in two handfuls of Wood-Ashes, and when it seetheth, put your Wool or Yarn into it, and let it remain there about half an Hour, at that Time take it out and wring it, and put it in again, and let it seethe as long as before; and then if it be before a brown Blue, it will be a dark Green; or if it was white, it will be a yellowish Colour. And thus much at present in relation to Colours for dying Silks or Cloth.

*For a light Green.* Take the Juice of the Herb called Horsetail, add to it a little Allom, Verdigrase and Copperas.

*To cover or dress Skins with Gold or Silver.* Grind brown Red with a Muller on a Marble Stone, add



to it a little Water wherein Chalk has been dissolved, and lightly go over the Skins till they look whitish, and before they are dry lay on the Leaf-Gold or Silver a little lapt over one another, that no space be found wanting; when they stick well to the Leather and are dry, polish, and it will give a very glorious Lustre. The Silver you may go over with a Lacquer Varnish, and change it into a Gold Colour.

Or another Way, Take Glare of Eggs or Gum-Water, brush the Skins over with it, so lay on your Leaf-Gold or Silver, doing as before.

## CH A P. II.

*The most curious Art and Method of Colouring Skins, or any Pieces or Parcels of Leather, or Bristles; as also of Gilding Leather with Gold, Laying with Silver, or Lacquering, &c.*

*To Colour Skins Green*

**T**AKE the Leaves of Night shade, bruise them in a Mortar, strain out the Juice, and dissolve in a Pint two ounces of Allom, add half an ounce of Verdigrease, and heat them gently over the fire, and then suffering it to stand for twenty four Hours, strike over the Skin with it warm, and suffering it to dry, do it again 'till it has taken the Colour, which will be very lively.

*To colour Black Leather, after the Order in Germany, &c* Take of the Bark of Elder two pounds, of the Filings, or Rust of Iron the like quantity, put to them two gallons of Rain-water, and stop them up close in a Cask, or other Vessel, and so suffer them to stand for the space of two Months; then put to the liquid Part, a pound of Nutgalls beaten to Powder, and a quarter of a pound of Copperas, heating them over the Fire, and suffering to stand twenty four Hours after, and so use them with a Brush, 'till the Skin has taken an excellent Black. *To*

*To colour White Leather, the best Way.* Having hung your Skins in Chalk, or Lime-water, 'till they are grown supple, that the Hair, or Wool, may be stripp'd off, stretch them on Tenters, or by Lines, and smooth them over; then take your Colouring mixed, according to the Purport of what you intend they shall take, and having first brushed them over with allom water very warm, give them the Tincture, and dry them in the Sun or in some warm House, and they will be useful on fundry Occasions, without any further trouble.

*To make White Leather Blue.* Take the Berries of Elder a quart, strain out the Juice, and boil it with an ounce of the Powder of allom, and half an ounce of indico, or Small Blue, and brush over the Leather with a fine Brush dipped therein three or four times, suffering it to dry between Whites, and the Business will be effected.

*To colour Leather a fair Red.* Having rubbed your Leather well with Allom-water, or Allom'd it, take stale Urine, seeth it and scum it 'till half be wasted; put then to it an ounce of the finest Lake, with the like quantity of Brazile in Powder, an ounce of Allom, and half an ounce of Sal-Armoniac, mix them well, and keep them stirring over a gentle Fire about two Hours, and so use the liquid Part, and your expectation will be answered.

*To colour your Leather a curious French Yellow,* Take one part of Chalk, and another of Wood-Ashes, and make thereof a good Ley; then strain out the fine or liquid Matter, put it into a Vessel over the Fire, and put into it Turmerick in Powder, and a little quantity of Saffron, and so suffer it to simmer 'till it becomes pretty thick; then set it to cooling, and as you have occasion use it, as before mentioned.



*To colour Spanish Leather, &c.* Take that which the *Dutch* call *Pomplemelch*, warm it, and rub the Leather therewith, then take of *Venis tot Appelen*, and having beaten it small, put a considerable quantity of fair Water to it, and let it soften over a gentle Fire, then press out the Water, and so in the liquid part rub or wash the Skin, doing it so often, and after that, take Shoemakers Black, the finest, and rub over the Skin with it, having in the wetting added to it a little Vitriol, or copperas, and suffering it to dry, take *Goose* or *Hogs Grease* in a woollen Cloth, and rub the Skin over for a great space, where there is a good Fire to supple it in; and then rub it over with your Hands, 'till it disappear; or, instead of Grease, Linseed or Train-Oil may be used, and so in case of any other Colour, according as the colours are designed.

*To dye Bristles a curious Red for Brusbes.* Take an ounce of Brazile Wood in powder, half an ounce of Allom, a quarter of an ounce of Vermillion, and a pint of Vinegar, boil them up to a moderate thicknes, and dip the Bristles in when it is very hot, suffering them to continue for some time in the Liquor, and they will be of a curious Red

*To dye Bristles or Feathers, a curious Green, &c.* Take of Verdigrease an ounce, Verditur the like quantity, Gum-water a pint, mix them well together, and dip the Bristles, or Feathers, they having been first soaked in hot Water, into the said Mixture.

*To dye Bristles, or Feathers Blue.* Take an ounce of Indico, as much of Bisse, as much Allom as a Hazel-nut, put them into Gum water, and dip the Materials into it hot, hang them up to dry, and clap them well, that they may open. And so changing the Colours you may in this manner

dye the aforefaid Materials of any Colour; as for Black, use Logwood and Galls; for Purple, Lake and Indico; for Carnation, Vermillion and smalt, for Yellow, Berries and Saffron, with a little Tartar mingled or dissolved in your Gum-water.

*To dye Ivory, Bone, or Horn, a curious Red* Take the Materials and soften them in Water wherein Tartar has been dissolved; then take Vermillion and Brasil, temper them well in Water, boil them up in a Liquor, put your Horn, Ivory, or Bone, into it and suffer either of them to be there, it being hot, for a convenient Time, and taking them instantly out, cast them into cold Allom water; and if they have not taken the Tincture at first, use them in the like Manner a second Time, and so proportioning the Colours you may, in this manner make them take what colours you please.

*To marb'e Books, or Paper, the best way.* Take four Ounces of Gum Arabick, dissolve it in two quarts of fair Water; then provide several Colours mixed with Water, in Pots or Shells and with peculiar Pencils to every Colour, sprinkle them by way of Intermixture upon the Gum-water, which must be in a Trough, or some broad Vessel; then with a stick curl them, and draw them out in streaks to as much Variety as may be; which done hold your Book, or Books, close together, and only dip the edges in on the top of the Water and Colours, very lightly; which done take them off and the plain Impression of the Colours in mixture will be upon the Leaves, doing as well the ends as the front of the Book in like manner; and in this case you may do Paper, by dipping in it on the flat, as also Linen Cloth, &c.

*To dye or colour Horse Hair, or any Hair, &c.* Steep it in Water wherein a small quantity of Turpentine has been boiled for the Space of two Hours; then



then, having prepared your Colours very hot, boil the Hair therein, and any Colour, black excepted, will take, but that will only take dark Red, or dark Blue, &c. And after this manner, with Colours cold, or but luke-warm, you may dye the Feathers upon the backs of Poultry, wild Fowl, Hair on Dogs, Horses, or the like, in as much Varieties as your Fancy can suggest.

*Another, fair Red or Skins, &c.* Wet your Skins, or Fells, in Allom-water, in which has been dissolved a like Quantity of Salt, with half as much Lime, when being again stretched and dry'd, take the last of Brewers Drink a Quart, put into it an Ounce of Brazile Powder, a Quarter of an Ounce of Vermillion, and an Ounce of Allom-Powder, thicken them over a gentle Fire, by continual stirring, and so with a Brush, or Cloth, rub over the Skins at an evenness, not laying it thicker on one Place than another, and so do three Times successively, suffering them only to dry the mean while, and your Expectation will be answered.

*To dye Skins a Crimfon Colour, &c.* Scrape hard Soap three Ounces, and dissolve it in fair Water, and add to that three Ounces of Allom, boil them over a gentle Fire 'till the Water grow clammy, or a little inclining to thickish; then put in a few Grains of Cochineal, half an Ounce of Lake, two Ounces of red Lead, and a Quarter of an Ounce of Vermillion, and a small Piece of Indico, mix them well, by stirring them together, and keep them upon a gentle Fire, 'till they are about the thickness of the white of an Egg; then having first rubbed your Skin over with Allom-water, and suffered it to dry, apply this Colour, as has been directed in the former.

*To colour Skins a light Blue, or Turkey Colour.* Take Smalt two Ounces, red Wine a Quarter of

a Pint, Allom two Ounces, Vinegar half a Pint, and white Starch half an Ounce, put them over a gentle Fire, not suffering them to become over thick; and then soaking the Skins with Allom-water, and suffering them to dry as usually, add to this Colouring half a Pint of Gum water tolerably thick, lay it on, glazing it over, when dry, with a Polisher.

*To colour a light Green.* Take the Herb called Horse-Tail, bruise it, and add to the Juice a small Quantity of Verdigrease, Allom and Copperas, and over a gentle Fire make it into a Colour, which will prove very pleasant.

*To dress or cover Leather with Silver, or Gold.* Take that which is called brown Red, and grind or move it on a Stone with a Muller, adding Water and Chalk, the latter being dissolved, and with it rub or lightly dawb the Skins over, 'till they look a little whitish; and then, before they are quite dry, lay on your Leaf Silver, or Gold, placing the Leaves a little over each other, that no intermission be found; and when they have well closed with the Leather, and are sufficiently dried on, rub them over with a Polisher made of smooth Ivory, or of a Horse's Fore-Tooth, and you will find it very splendid.

*Another Way of gilding Leather more lasting than the former, viz.* Take Glair, made or consisting of the Whites of Eggs, or you may, for want of the former, make Gum-Water, and with a Brush run over the Leather with either of them, which done, lay on your Gold, or Silver, and burnish it over as the former.

*To make Leather shine without any Gold.* Take Whites of Eggs, Gum-Water, and Powder of Antimony, mix them well together by beating, and having your Skins well dry'd, lay the mixture on them, and do it often, 'till the Leather be quite  
hid;



hid ; which done, let the Mixture dry, and then burnish them over ; and for want of Antimony you may use black Lead.

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### C H A P. III.

*How to recover faded Colours in Cloth, or Silk, to take Spots, Stains, Pitch, Tar, Rosin, Grease, Wax, Oil, &c. out of Silks, Stuffs, Woolen or Linen ; to preserve them from Damage of Worms, Moths, &c.*

*To make Cloth that has lost its Colour recover it, and look fresh and bright.*

**T**AKE of unquenched Lime two Ounces, of the Ashes of the Bark of Oak the like Quantity, and put them into a Quart of fair Water, mixing them well, and suffering a Settlement for the Space of an Hour, drawing off the clear Part, and therewith wash or carry over with a hard Brush the Cloth, and by twice or thrice carrying it over, it will look fair and bright.

*To wash Scarlet that is soiled or greasy.* Take two Ounces of white Tartar, beat it fine, and heat it over a Fire in a Pint of fair Water, till it be thoroughly dissolved and very hot, then suffering it to cool a little, take an indifferent hard Brush and dip into it, rubbing it lightly over with the same, and by so doing in a short Time it will return to its first Estate and Colour.

*To restore Silks of any Colour in the like Nature as the former.* Take an Ounce of unslacked Lime, and the like Quantity of the Ashes of Vine-Branched, and as much Oak-bark, mix them well together in fair Water, and make a kind of a Ley with them over a gentle Fire ; which being settled, take the clear part, and with a Brush or Sponge rub over the faded Part, and it will in a short Time restore it.

*To make a Soap to take Grease, Spots or Stains out of Cloth, Stuffs, Silks, &c.* Take a pound of Roch-Alom, burn it well, and beat it to powder, add to it the powder of the Roots of Florence-flame, a Herb so called, about half a pound, and to these add a new-laid Egg, and two pound and a half of Cake Soap, make them up with fair Water into round Balls; and when you are desirous to take out any Spot or Stain, wash well the place first with warm Water, and then lay a laying of this Soap upon it for 3 or 4 Hours, and then wash it off with other warm Water, and in often so doing they will disappear.

*Another excellent and approved way.* Take Wood-Sorrel and distil it in an Alembick with Fumitory, and wash the damaged place therewith, and it will in frequently so doing restore it.

*A Way to take Spots out of Linen or Woollen if coloured.* Take of the Juice of a Lemon, two spoonfuls, one spoonful of the Juice of an Onion, and warm them over the Fire, and with them often wash the Spots, and they will no more appear.

*How to make good Ley to take out Spots and Stains.* Put into three Pints of Water half a pound of Soap-boilers Ashes, and suffer them with daily stirring to remain in it for the space of four days, then pour off the clear Water, and mix it as you see convenient with Fullers Earth, and lay it hot on the place, and it will with often using effect your desire.

*A very good Way to take Spots of Oil out of Cloth.* Take Oil of Tartar, and mixing it with the Powder of a burnt Bone, apply it to the Spot, and hold over or upon it a spoon wherein is a live Coal, and the Heat thereof will attract the Grease, and render the Spot invisible.

*To take Pitch, Tar, Resin, or Bees-Wax out of any Stuff, Silk or Cloth.* Take Oil of Turpentine, warm it a little and apply it to the place, suffering it to  
soak



soak in for the space of an Hour ; and then gently rub it, and you will perceive the Rosin, &c. loosened and instantly to crumble away.

*A Soap Water to take out any manner of Spots how to make it.* Boil Strawberries, or the Leaves thereof, in a quart of fair Water, and a pint of Vinegar, then add 2 pound of Castile soap, and half a pound of Chalk finely scraped ; boil them till the moisture is consumed, and when you use it, wet the place with sharp Vinegar, and rub it over with this Soap, drying it afterwards against a Fire, or in the Sun.

*A speedy Way to take out all Manner of Spots or Stains out of Scarlet or Velvet, of any colour, not changing it.* Take Soap wort, an Herb so called, strain out the Juice, it being bruised, add to the Juice a small quantity of black soap, if the Scarlet be not died in a clear Grain, and these being made thin, wash the Place with the liquid part, suffering it to dry between whites, and by this Means in a Day or two you will perceive the Spots to disappear.

*To take Iron-moulds or Stains out of Linen.* Take the Juice of a Lemon. warm it with a little powder of Allom dissolved in it, wet it, and as it is wet, dry it with a spoon wherein is a live Coal, and so continue to do for the space of two Hours, and the Spot or Ironmould in a washing or two will disappear. This will take out spots of Ink &c.

*To take out oily spots out of Parchment, or oily Paper.* Take the Powder of burnt Bone, finely sifted, and place between two boards, pressing it hard, some of the Powder on either side the Spot, and in two Days it will be quite vanished.

*An excellent Way to take spots or stains out of Linen,* Take fair Water, and dissolve in it Bay salt, and steep the Linen therein ; then take Juice of Sorrel and sharp Vinegar, and rub the spot with them, suffering it likewise to soak in, and in often so doing it will disappear.

*To take away Ink-stains, stains with Fruit, &c.* Take Powder of Allom half an ounce, Juice of Houfleeke or Sengreen 2 ounces, and apply them, the Allom being dissolved very hot, the business will be done.

*Instructions how to keep silks from staining in washing.* Heat Rain water, and when it is very hot put into it Cattle soap, dissolve it well ; then suffer it to be almost cold, after which sprinkle in a small quantity of Fullers Earth, and so scour out your Silks ; then suffer them not to lie on heaps, but spread them, and clap them between dry Cloths, and they will be fresh and fair.

*Directions to keep Linen laid up without using, from Damage many Years.* Having washed and well dry'd your Linen in the Sun, fold it up, and scatter in the folding the powder of Cedar-wood, or Cedar small ground, having first perfumed your Chest with Storax ; by which means not only dampness is prevented, but Worms or Moths, &c.

*Further Directions to keep Woolen or Linen sweet and pleasant, also from being damaged by Moths, Worms, &c.* Take Orange Peels dry'd in an Oven, beat them to Powder, add to that Powder of Elecampane Roots, the Powder of Arras and that of Juniper, and air your Cloaths when you lay them up over a Fire wherein bay-leaves are cast and burnt.

*A pleasant Water to preserve Linen or any other thing a long Time, giving it moreover a curious scent.* Take of Spike-flowers, two pound, Costmary one pound, balm an handful, Penny-Royal as much, Mace two ounces, Arras powder an ounce, soak these in White-wine, and distil them, and sprinkle your Cloaths in a fair Day, suffering them afterwards to dry, and then lay them up.

*A good Way to wash any Linen or Woolen interwoven with Gold and Silver, and not to impair it.* Dip the part you design to favour in Urine and Allom, and suffer it to be well soak ; then soap the rest, but not that



that place, and having washed it, hang it to dry in the shade, and your expectation will be answered.

*To remove stains occasioned by Wine or Vinegar.* Take new Milk, and steep the thing stained therein a Night; then take Runnet, and apply to the Stain, rubbing it in; and by so doing twice or thrice, you will find it fair as at first.

*To make Linen that is turned Yellow, very White.* Heat Milk over the Fire, and add to a Gallon a pound of Cake soap scraped in, so that it may dissolve, and when the Cloaths have boiled therein, take 'em out, and clap 'em into a Lather of hot Water, and wash 'em out speedily.

*To whiten Cloth the best Way.* Take your Cloth and buck it well, then spread it upon the Grass, and sprinkle it with Allom-water, suffering it to continue abroad for three or four Days; then buck it again with Soap and Fullers Earth, and use it as before, and so it will be both thick and white.

*To make Salt-water potable.* Take a Vessel of Wax, hollow and empty, dip it in the sea, the Water that gets in by the Pores of the Wax will be drinkable. An Earthen Pot not baked, if the mouth be close stop'd, will purify the Water: its done more speedily and plentifully. Put Fresh water sand into salt-water, and stay a while, putting a Linen Cloth before the mouth of the Vessel under that which must receive it. It will be strained through, and will be fresh, having lost all its saltness. *Wicker.*

#### C H A P. IV.

*Direction: how to scour Silver and Gold Lace, make Plate bright, and look like new: To take Spots and Stains out of it: To diaper Linen, whiten Ivory, make Cement for broken Glasses, &c. Perfumes of divers Kinds, Musk balls, and other Matters.*

*To scour Silver and Gold Lace, and to restore it to its first Lustre, as also Imboss, or Embroidery.*

TAKE

**T**AKE the Lace, and lay it as smooth as may be upon a dry Woollen Cloth; then burn Allom, and beat it to powder, sifting it afterwards through a fine sieve; then with a brush rub it gently over the Lace, and by so doing, and often turning it, the business will come to perfection. And thus,

*To scour and take Stains out of any Silver Plate, &c.* Steep your Plate in soap-leys for the space of four Hours; then run it over with Whiting, wet with Vinegar, so that it may stick thick upon it, and dry it by a Fire; after which, rub off the Whiting and pass it over with dry bran, and the spots will not only disappear, but it will look exceeding bright.

*To boil up Plate that it may look like new.* Take of unslacked Lime a pound, of Allom the like quantity, Aquæ Vitæ and Vinegar of each a pint, and of beer grounds two quarts, boil the Plate in these, and they will set a curious Gloss upon it.

*To make any Linen, at the first Appearance, look like Diaper.* Take it when new washed, spread it upon a Table somewhat damp, and sprinkle it over with a brush dipped in Allom and Rose-water in form and manner as best shall suit your Fancy.

*To whiten any Piece of Ivory that is turned Yellow, also Bone, &c.* Take a pound of quick Lime beat small, and place it on the Ivory 'till it be covered; then pour gently by degrees, Vinegar thereon, and so suffering it to lie for the space of twenty four Hours, take it out, and rub it with Allom powder, and the first Whiteness will be restored; and in the like manner bone may be used and ordered.

*To cement broken Glass, or China Ware a good way.* Take the Whites of two Eggs, half an ounce of Quick lime beaten to powder, a dram of the powder of burnt Flint, and the like quantity of Gum-sandruck, temper them well together, and add for the better moistening, a little Lime-juice; with a  
Feather



Feather anoint the Edges of the broken Vessels, and clap the pieces together by a warm Fire, and if your Hand be steady, the Fracture will hardly be discerned, or white Lead and Oil such as Painters use.

*To remove Spots and Stains out of very thin Silks, &c:* Take Whitewine Vinegar a pint, make it indifferent warm, then dip a black Cloth into it, and rub over the Stains; then scrape Fullers Earth on it, and clapping dry woollen Cloths above and beneath, place an Iron, indifferently hot, on the upper, and it will draw out the Spots, &c.

*To make an excellent Perfume, preventing Pestilential Airs, &c.* Take Benjamin half an ounce, Storax the like quantity, as much of Galbanum, temper them being bruised into a Powder, with the Oil of Myrrh, and burn them in a Chafing dish; or for want of these, take Rosemary, Balm and Bay Leaves, heat them in Wine and Sugar, and suffering the moisture to consume, let them likewise burn by the heat of the Pan, and they will cast a curious scent.

*To perfume Cloaths.* Take the best Cloves an ounce, dry them in an Oven, and beat them to Powder, do the same by a like quantity of the Wood Rhubarb and Cedar, and sprinkle them in your Box or Chest, and they will not only cast a curious Scent, but likewise preserve them against Worms and Moths.

*A curious Scent, or Perfume, to carry with one when going abroad in damp Airs, or to visit sick or infected Persons, and is wonderful good for all Pains in the Head.* Take Orange-flowers, Butter an Ounce, Oil of Nutmeg a quarter of an Ounce, Ambergrease a dram, and Civet a scruple, mix them well together, and carry a small Box of it about you, smelling to it as you have occasion.

*To make a sweet scented Powder very pleasant.* Take Rice-grounds, and the small white Starch a like  
C quantity,

quantity, pound them in a Mortar, and sift them well through a fine Sieve, dry the Dust in an Oven, or before the Fire, then infuse to each pound a grain of Civet, and half an ounce of Rose-scent, and keep it looped up till it be well infused; and then use it for your Hair, or otherways at your discretion

*To make scented Wash-balls the best Way to keep, &c.* Take Cattle Soap, scrape it into new Milk, and heat it over the Fire 'till it melt, and again become thick, then put a small quantity of Amber-grease, Lavender, Cotton flowers beaten and dry'd, till they are as fine as Meal, and a little Spirit of Cloves or Cinamon, and so make them up into Balls, and lay them a drying in a warm place, but not in the Sun.

*A Perfume to drive Vermin out of a House, &c.* Take Burgundia pitch an ounce, Brimstone half an ounce, Storax the like quantity, the Powder of Mother-Ambra a Dram, beat and mix them well together, and burn them upon a Chafing-dish, and where the scent comes, the Mice and Rats will fly with much speed to avoid it.

*An Ointment or Perfume, to remove an ill scent that has tainted the Brain, &c.* Take of the Oil of Bay-berries half an ounce, of the Powder of Frankincense a dram, the Oil of Mace, or Spirit, a scruple, as much of the Oil of Turpentine, mix them well together, and keep them in an Essence Bottle.

*An Essence that will immediately perfume the Place; how to make it.* Take Cinamon an ounce, Camphora half an ounce, Opopanax a dram, Roses clean picked a handful, Rue and Rosemary-flowers the like quantity, the Gum of Myrrh a dram, bruise them well, and put them into a small Alembick, or Glass Retort, and take the Essential part in a Bottle, stopping it close, unless when occasion requires and then by opening it you will soon find the Effects answer your Expectation. CHAP.



## C H A P. V.

*The curious Art of Drawing in all its Perfection, as well human Bodies, as Birds, Beasts, Fish, Land-ships, Building, and many other rare Portraits, by plain and easy Rules, in due Proportion and manner.*

**S**EEING Limning, or drawing, is an Art very curious, much admired, and sought after in all Ages, and especially in the present, I have thought it convenient to lay down Methods and Rules for the Instruction of Learners especially, thereby to enable them for greater Acquirements, &c.

The first material Thing to be known is, the necessary Instruments requisite to be used on this Occasion, *viz.* *First*, Sallow coals or Sallow-wood burnt to a Charcoal, that it may be sharpened in the form of a Pencil, to touch over lightly the first Draught. *Secondly*, the out Feathers of a Duck's Wing, to wipe off as you see Occasion, what is superfluous, or the Matter designed to be altered. *Thirdly*, black Lead Pencils well pointed, to go your Draught the second Time. *Fourthly*, Pens made of Ravens or Crows Quills, to finish the Design by giving a more curious Piece. *Fifthly*, a Rule and a pair of Compasses with three Points, to take in and out at Pleasure, the one for black Lead, the other for white or Red Chaik, or any other Paste. And the use of the Compass is to be observed in most Drawings, to mark out the equal Distances after your out Strokes are drawn.

Having the afore said Things in readiness, proceed to Practice; and in the first Part begin with a plain geometrical Figure, such as are found to be the Circle, Oval, Square, Cone, Cylinder, Triangle, which accordingly you may mark out with your Rule and Compass, 'till you can readily do it without them, for a circle well carried will much avail you in any orbicular Form, as the Sun,

Moon, Globe of the World, &c. The Oval is a Direction for the Mouth, Face, the Foot of a Wine or Beer Glass. The Square is very useful in confining the Picture you are to copy. The Triangle wonderfully assists you in making half a Face. The Cone will assist you in drawing Globes, Spires of Steeples, and the like. The Cylinder assists you in drawing Pillars, Pilasters, Columns, together with their Ornaments proper to Architecture.

Having considered the Matters premised, proceed to draw Pears, Apples, Apricocks, Peaches, Grapes, Strawberries, Peasecods, Terfles, and other Insects, with Flowers and Branches of Trees in their Proportion: And being a little perfect at these, proceed to the third Practice, which is usually imitating Beasts, As

1. Those that are more heavy and dull, viz. The Elephant, the Bear, Cow, Ox or Bull, and sometimes Sheep and Goats: Those more nimble and fleet, as the Horse, Stag, Hart, Unicorn, Tyger, Lyon, &c. And for Birds, practice the Eagle, the Swan, the King's Fisher, the Parrot, the Partridge, the Pheasant, &c. Then again for Fish, the Whale, Salmon, Pike, Carp, Herring, Mackrel, Lobster, and such other Fishes as are most in use to adorn a Chimney-piece, or any the like Matter or Business; and from these proceed to Mellons, Pumkins, Ears of Corn, Cucumbers, Parsnips, Carrots, Cabbages, &c. When having practised your Hand in their proportion, and knowing the proper Colours, of which I shall treat hereafter, you may easily form and illustrate them, though the Excellency of this Art consists in drawing a human Body to the Life: And because it ought not rashly to be all drawn at once, I shall proceed with these in order, especially as to the Rules in general.



## C H A P. VI.

*To draw the Face in divers Postures and Proportions, the most exact Rules, and what of Variety is to be considered therein.*

*For drawing the Face, General Rules, &c.*

**I**N this Case curiously observe the Face in its Motion, whether upward, forward, downward, or sideways, touching lightly the Features where the Eyes, Nose, Mouth and Chin ought to stand : Then more perfectly go over them, for the Circles, Squares and Triangles that are used in this Matter may serve well enough to guide your Judgment where to place them. And in this Case, observe diligently the principal Muscles of a Face, appearing most in aged Men or Women. And there is usually a threefold Proportion observed in a Face ; as, First, from the Top of the Forehead to the Eyebrows. Secondly, from the Brows to the Bottom of the Nose ; and Thirdly, from thence to the Bottom of the chin ; but in some the Forehead is lower, and in others the Nose longer.

The Distances between the Eyes consist in a full Face of the length of one Eye, but in a three Quarter or side face, that Distance is lessened answerable to the proportion. As for the Nostril, it ought to be exactly placed against the corner of the Eye. And in a fat Face, you will perceive the cheeks to swell, when on the contrary, in a lean Face, the Jaw-Bones stick out, and the cheeks fall in.

You may discern a smiling countenance, by perceiving the corners of the Mouth to turn up a little ; and a frowning or fowre countenance, by the Foreheads bending, and somewhat wrinkling on the Top of the Nose.

To draw a foreright Face, make the Form of a perfect Oval, divided into three equal parts, by two Lines. In the first part place the Eyes. In

the second, the Nostrils. And in the Third, the Mouth; observing to keep the Eyes distant from each other, the Length of one Eye, and that their inward corners be perfectly over the outside of the Nostrils.

To draw an upright Head, it must be made equal with three Lines every Way, either upward downward, higher or lower, and that must, as the former, be divided into three equal parts.

To draw the inclining, the foreshortened Face, observe how the Lines concord or agree together, and with ease you may draw, in their proper places, the Nose, Mouth, and other parts, with a little practice, and in these Forms it is requisite that you are very perfect, as being Rules of frequent Use; for of the many parts of Man's Body, the Face is most difficult; but having got the true proportion, with your Measures, you will be capable, let the Face turn which Way it will, to form it; and further, note, that whatsoever proportion the Face you are to imitate bears, your out Strokes must be formed accordingly.

As for the Nose, it requires to its due proportion much care and diligence, as being the most eminent part of the Face; in which especially observe the hollowness, roundness, and indenting of the Nostrils, &c.

The next Thing, especially where the Body is to be covered, is to be considered of the Hands, in their several postures and positions, as well by Measure as without, as also Hands and Arms, of whose postures, as well as the former, it would not be unnecessary for the Learner to get Draughts for his better Imitation, which may be had at most picture shops for a small Matter, ready done.

When you have practised, and are a little expert in drawing the Hands and Arms, &c. proceed to the drawing of Feet in their several postures, as well

well without as with Measure; which having attained separate, exercise your skill in drawing legs and feet conjunct or joined together, that so understanding the frame and particulars of the whole Body, you may be the better understood in drawing the Figures in their due proportion and right postures, in doing which there is no small Difficulty. And in this manner; having proceeded to form the Members, draw the other parts of the Body, as the shoulders, Back, Breast, Belly, secrets, thighs, and the like; and lastly, take care in due proportion to join them, that they may appear firm and complete.

Coming to practice upon an entire Body, the best Way is to begin with those of children; and my reason is, because they are generally fat and plump, and rounder than the Bodies of Men and Women, and consequently require so much Curiosity in the Observation of Muscle and other Features, which render the drawing less difficult.

As for your further Direction in drawing, observe ever to begin at the Head, and so proceed by Degrees, running the whole lightly over at the first, and encreasing more fully, as you see Occasion, ever being careful to take Notice, that your parallell Joints, Muscles, &c. be rightly proportioned, and exactly opposite; also that the Motions of the Body be answerable to each other, and that the Parts and Limbs have a due Symmetry, not being faulty in the Indecency of having one great Arm or Leg, and another small one, nor a great Finger upon a small Hand, neither further than the Proportion requires, suffer one Limb or Member to be longer than another; and although it so happen, which it frequently does, that at first you commit Errors of this Nature, yet be not discouraged, for often practice will redress them.

Having



Having thus far proceeded with Success, and being indifferent perfect herein, you must consider what it is to Shadow, and in this Case observe the following Rules.

The out lines of the Draught of any Picture, give the Symmetry or Proportion, which ought to be sufficient to a good Judgment, but the Lines and Shadows produce to the less curious, the lively Likeness in Shadowing; therefore of any Picture, you must take notice to cast your Shadow always one Way, viz. On which Side soever you begin to shadow your Figure, whether on the right or left Hand; as in the Figure of a Man, if you proceed to shadow his left Cheek, the left Side of his Neck, Body, and all other Parts must be shadowed, unless the right Side of the Figure be dark, by reason of some other Body standing between the Light and it, as suppose three Men were standing together, then must the Body or Figure in the middle, be darkened by the foremost, unless the Light by facing it come between them.

Further note, That all Shadows must consequently grow fainter, as they are further removed from the opacious Body from whence they proceed. But in case of Storms, where Clouds or Waves, by contending Winds are driven one against another, contrary Shadows are allowed, as striving for superiority And so you must be sure to supply the greatest first, and according to your Judgment supply from them the lesser.

All circular Bodies must have a circular Shadow, as they have a circular Form, and as the object of Light which causeth the shadow is circular.

And now for your further Information of this kind, observe that a Man standing, from the top of the Head to the Bottom of the Feet, is in due Proportion eight Times the Length of the Head.

The

The Arm when it hangeth streight down, reacheth within a Span of the Knee ; the Hand must be the Length of the Face, and spread broad, must cover it, and no more ; and further note, that in drawing a Figure standing, you must in the first Place draw that Leg which the Body stands firm upon, or else your Figure will undecently decline one Way more than another, as if it were falling. The Arms of a Man extended are his full length ; and so of a Woman in the various Particulars. Thus having directed you in the drawing and proportioning naked Figures I now proceed to give Directions about Garments, &c.

As in naked Figures, it is observed you draw the out lines first ; so you must do in drapery or cloathing, leaving space within for your greater or lesser Folds ; then first draw the greater Folds, and break them into lesser contained within them, and the closer the Garment sits to the Body, the narrower and smaller must be the Folds, and in shadowing, the innermost must be the harder, and the outermost softer.

Continue always through your Garment the great Folds, but as for the lesser, break them off, as you see convenient, and the finer your Drapery is, the fuller and sharper must your Folds be, and the Shadow the stronger, yet more pleasant to the Eye, ever taking notice, that that part of any Garment that sits close, as the Body Coat of a Man, the Breasts of a Woman, and the like, must not all be folded, but rather with a sweet Shadow represent that Part of the Body that the Garment appears to cover, as Women's Breasts, with a sweet round Shadow, &c. And thus much for the Body of Man in drawing.

## C H A P. VII.

*Landskips, what they are, and what is required in the Drawing, and curious proportioning them pleasant to the Eye or Fancy, &c.*

**A** Landskip is that which gives a pleasant Prospect of Trees, Hills, Rivers, Cattle, and other rural Delights, with Towns, Cities, Castles, Promontories, Rocks, Ships, Boats, Barges, and whatever the Fancy of that Kind can form. To express which, and make all truly appear natural as they ought, according to the true Proportion and Distance, observe in every Landskip to make a very fair Horizon appear, the sky either clear, or over cast with Clouds, expressing the rising or setting of the sun to issue as it were from over some hill, mountain or rock; but in a fair Landskip, beware you express not the Moon or stars, which are only to be seen in a Night piece; and in case such a Piece be required, you may draw an Astronomer with his Quadrant, taking the height of the Moon; another with his cross staff, taking the Distance of certain stars; some standing with a dark Lanthorn far from them, to give them Knowledge of their Degrees. an Owl flying in the Air, Men catching of Partridges with Low-Bells, a Wolf worrying of sheep, and the like; being natural to such pieces.

If in any fair Landskip you express the Light of the sun, ever observe, that throughout your whole Piece you cast the Light of your Trees, Buildings, Rocks, Ruins, and all Things mentioned or expressed within the Work, thitherward: Observe further to lessen your Bodies proportionably, according to the nearness or distance they should naturally appear, so that the further the Landskip goeth from your Eye, the fainter you must express any Thing seen at a Distance, till at last the Earth, Water, and Sky seem to meet, as  
do



do the Colours in a Rainbow; wherefore when at any Time you see good Pieces of this Kind, take your Observation more particularly from them, and imprint the Fancy as well as may be in your Mind.

### C H A P. VIII.

*The curious and much esteemed Science of painting or limning in Water Colours, and how exactly to proceed therein, either on Parchment, Glass, or Copper, with the Mixture and Distinction of the sundry colours, and other rare curiosities.*

**H**AVING gone over that which we may properly term Limning, or as many will have it, drawing; I now come to that Part, vulgarly known by the Apellation of Limning, viz. laying in Water colours the most curious of all, and much practised by Persons of the best Quality.

To fit yourself, and prepare for the Practice of this, you must have Gums of all sorts to make your Waters as Occasion requires; also a Marble flat stone, a muller, colours of various sorts, liquid Gold and silver, size to lay Gold, &c. parchment, of the finest pencils of sundry sorts, pots and shells to put your colours in.

To make your Gum-Water, take Gum-Arabic, White, Clear, or Transparet, for that which is Yellow, or of an Amber-Colour, is insignificant; tie up a Quantity in a Rag, and hang it in fair Water, till it be dissolved, then the Water being stiff enough for your purpose, mix your Colours with it, always having two sorts to make a weaker or stronger, as the Matter requires.

Gum-Lake is a compound Gum made of whites of Eggs finely beat, Honey, Gum of Ivy, strong Wort, &c. which being well mingled and beat together, they will run like Oil, and in the end harden; and this you may buy ready made, as the

the former, observing only, that it be clear and transparent.

As for the Colours, they are simply six, viz. White, Black, Yellow, Green, and Blue; to which some add Browns, but they are generally compounded: Of either of these there are several sorts, as these, viz. Blacks the best, are burnt Ivory, Cherry-stones, Lamp-black. The Whites are ceruse and White-Lead. The reds are red-lead and Lake. The Blues are Indico, Ultramarine, Bise smalt. The Greens are Bise, Sap-green, Pink, Cedar-green. The Yellows are English Oker and Masticote. The Browns are Umber, Collens-earth, Spanish Brown.

These (though there are others) are the principal Colours in Limning, and therefore I chuse to speak of these only in this Place, the others omitted being fit only to colour Pictures, or wash Maps, &c. and of these

The Colours to be washed are Bise smalt, Cedar, Ultramarine, Masticote, and Red Lead. The Sap-green is only to be steeped, and the rest I have mentioned are to be washed and ground.

To wash Colours, you must put a Quantity of the Colour intended into a clean earthen Dish, and pour Water thereto very clear, stirring the Colour and Water together, suffering it to stand a while, and perceiving the Grease or Scum to rise, take it off, and pour out that Water, putting other Water to the Colour, &c. and so do it till the Water become clear, and the Colour at the bottom remain fine, then pour away the Water gently, and you will find the Colour sticking about the Sides and Edges of the Dish, as also at the Bottom, and if it so happen, that you can get an Ounce of pure Colour out of a pound (though the rest is serviceable for many Uses) it is sufficient.

In steeping Sap-Green, you must put it only  
into

into fair Water, adding a fourth part of Allom-powder to raise the colour, and at the end of twenty four Hours it will be a curious Green.

As for the colours that are to be washed and ground, take a small quantity of either, and put it into a clean Shell, adding a drop or two of Gum-water, and work it about the sides of the Shell with your Finger, suffering it there to stick till it is dry; then draw over it your Finger, and if any come off, then you must add more Gum-water, but being dry, if it glitter or shine, it is a token there is too much Gum in it, which you must remedy, by tempering it up with fair Water only.

There are some Colours, as Umber and Lake, which parch and crack when they dry, and therefore to bind them you must temper them with fine Sugarcandy dissolved in fair Water; so you must do by other hard Colours subject to this Defect.

To burn the Colour thereto appropriated, put them into a Crucible, cover it with a Lid of Clay, and set it on a hot Fire, and suffer it to be red hot, and when the colour is cold, you may wash or grind it, as the Nature requires, but do neither before they be thoroughly burnt.

To grind the Colours I have directed so to be used, take a quantity of any of them cleansed from dirt and filth, and laying it upon your Stone, bruise it a little with your Mallet; and then with fair Water grind it till the Colour be very fine, then have in readiness a large chalk stone with Troughs or Furrows in it, and pour your Colour into it, and there suffer it to remain till it be well dry, at what time take it out, and reserve it in Papers or Boxes for your Use.

Of these six simple Colours, adding the Brown, many may be compounded for Faces of all Complexions, Garments, Landships, Buildings, Rivers, Birds, Fish, Beasts. &c. as thus,



To make a violet colour. Take Indico, White and Lake, and at pleasure you may, as you take more or less of a colour, make it lighter or darker.

Lead colour you make of Indico and White mixed and tempered together.

Make flame colour, or colour for flaming Fire, of Red-Lead and Masticote heightened with White.

To make a Scarlet colour, take Red Lead Lake, and a small quantity of Vermillion: For note, that the latter is not good in Limning.

To make a Light Green, take Pink and Smalt, with white to make it lighter as occasion requires.

To make a Purple Colour, take Indico, Spanish-Brown and White well tempered and heightened.

To make a Bay colour, take only Spanish-Brown and White.

To make a Murrey colour, take Lake and White.

Many other colours are made by mixture, too tedious here to be recited; wherefore I leave it to the discretion of the Practitioner, to mix them suitable to his Work or Fancy, and proceed to the practical Part of this curious Art, &c.

## C H A P. IX.

*Instructions for the preparing your Tablets, and laying on your colours in their graceful Shadows and Proportion and what is to be observed as to the Lines in the Face, Complexion, and Procedure in Drawing Curious; and many other Matters.*

**W**HEN you have prepared your colours, prepare likewise good Pencils; to know them draw them wet thro' your Mouth, and if they come to a Hair, or sharp point they are good, but if they after that stand rough, or Hairs stare, or start out at the side, they are naught, and to be rejected.

The next thing is to prepare your Table; and in this case, get a fine pasteboard sleeked as smooth as a Card; then fine parchment or Vellum, and starch it

it upon the board, as smooth and even that no wrinkle, or rising may appear; to perfect which, you must lay the parchment side on your Stone rubbed very clean, and polish the contrary side, and let it dry in the shade.

Having thus prepared a Table, as big as you intend your picture, chuse a Light fair and large, free from Shadow, being if possible a Sky-light on the top of a House, yet such a one, as the Sun beams do not penetrate or glance upon, observing to begin and end your Work by one and the same Light, keeping the Room clean that no Dust may fly about to injure your Work.

The next thing to be considered, is your manner of sitting; and in this case, let your Desk be so placed, that when you sit before it, your left Arm may be placed toward your Light, and your right Arm from it, that your Light may flaunt upon your Work. And if you are to draw the picture of any live person, the posture being agreed upon, suffer him or her to sit above two yards distant from you, and as level with you as may be, marking well, that whensoever the party moves, tho' never so little, for never so little motion of the body or face, if not recalled, may occasion in a short time many Errors; and when you undertake this, the following Materials are requisite to be near to you, *viz.*

Two small Dishes or Sawcers with clean Water. the one to wash your pencils in when fowl, and the other to temper your colours withal; a fine large Pencil to cleanse your Work, called a Fitch-Pencil; a sharp Penknife to take off Hairs, coming from your Pencil, or Spots that may fall upon your Card; a Paper having holes cut therein, to lay upon your Card, to cover it from Dust, and to rest your Hand upon.

If your Carnation or Flesh-colour be tempered  
up

up it must be somewhat lighter than the complexion of the party you are to draw. If it be a fair complexion, you must have white lead and red-lead well tempered. If the complexion be swarthy or brown, add to your white and red lead, Masticot, or English Oker, or both, if occasion require it; but let the complexion be what it will, be sure to temper your flesh-colour lighter than the party to be drawn; for if it be too sad, there is no remedy; and observe to place your Shadows distinct from each other in a large Shell: And note, that in all your Shadows you must use some White; wherefore in the first place, lay a considerable quantity of White by itself, over and above what the Shadows are at the first tempered withal. In the second place, for Red usual to the cheeks and lips, temper Lake, and Red Lead. In the third place, for your blue shadows, as Veins, or under the Eyes, take Indico and White. In the fourth place for your faintish green shadow, take English Oker, white, and Indico, or sometimes Masticoate. In the fifth place, for a deep Shadow, take white, and English Oker and Umber. Sixthly, for dark shadows in the Faces of Men, take Lake and Pink, for they make an excellent fleshy shadow. And these being the chief shadows, I leave what may further occur of this kind to your discretion.

Having all things in readiness, the next thing you proceed to, is to draw the Face, in doing which take the following Method, *viz.* Lay the Ground with the colour answerable to the complexion of the Party; and then begin the Draught, the Party sitting. Now to finish a Face, three Operations of sitting are required. At the first sitting, you must only lay the dead colour. At the second, go over the Face more curiously, nearly observing whatsoever may conduce to the Grace or Deformity of the Person to be drawn, considering



dering it in a sweet dispose, and well couching the colours one within another. And in this sitting you perfect what only was rough before, by laying on the deep colours, so that at the third sitting you may finish the Face; as in the Eyes, Eyebrows, Hair, and Ears, which things are the last Work, and not to be perfected till the Hair, Curtain, or Backside of the Picture, as also the Drapery, be finished. And of these Sittings in their Order.

*The Operation of the first sitting, &c.* Having laid your Ground for the general Complexion, the next Work must be to draw the Out-lines, which you must effect with Lake and White mingled, drawing very faintly; so that if you chance to miss your Proportion, you may alter it with a deeper mixture of the same Colour.

Having drawn the Proportion of the Face, add to the former Colour a small Proportion of read Lead tempering it faintly to the Colour of the Cheeks and Lips, at the Tips of the Chin and Ears, about the Eyes and the Roots of the Hair, placing the red Shadows; and as for the Shadows, they must not be put in with the flat of the Pencil, but with small touches after the manner of Etching; and in this manner going over the Face, you will cover your Ground with these and the like Shadows: And in these dead Colours your curiosity need not be great, only strive to imitate Nature as near as may be, for the roughness of the Colours may be mended at the second Operation.

Having duly placed and proportioned your red Shadows; in the next place, put in your faint and blue Shadows about the corners of the Eyes and Balls, and your greyish Blue under the Eyes, and about the Temples, working them sweetly and faintly over by degrees, heightning the Shadow as the Light falls; as likewise the hard Shadows in the dark side of the Face under the Eyebrows,

Chin, and Neck; with some stronger touches on those Places than on the light side of the Face, and so bring all your Work together to an equal roundness, giving Perfection to no particular Part at this Time, but take a full view of your Object, and consider how near you hit the Life, not only in seeming Likeness, but Roundness, Boldness of Posture, Colouring, and such like. And having by this Time wrought your fainter shadows into the red shadows, you may venture to take a touch at the Hair, disposing it in such curls, folds and forms, as you shall convenient for Grace and Ornament, only drawing it with some Colour suitable to the Life, and fill up the empty space with Colours, deepening it somewhat more strongly than before in the deepest shadowed places. And this may suffice for the First Operation.

*The second Operation, or Sitting:* In this Sitting, the Party must take the same Place and Posture as before; and then be curious to delineate with your Pencil, the particular Varieties of Nature: As you drew them over but rudely before, you now must sweeten them with the same Colours, by working and driving them one into another; so that no rough Edge, nor lump of Colour may appear, and this must be done with a Pencil sharper than the former, by which means the Shadow may be soft and smooth.

Thus having done, proceed to the backside of your Picture, and if there is a Curtain, as is the usual manner, required, we will suppose it to be blue Sattin; and to do it, temper as much Bisse in a Shell as will cover a small Card, suffering it to be moist and well bound with Gum; then draw with your Pencil the outlines of your Curtain, as also of your Picture, and so lay it over very thin with a large Pencil, that it may be the whole ground you intend to do with Blue; and then lay it

it over again with a substantial body of the same Colour; in doing which, you must be swift, keeping your Colour moist, and not suffering any part to be dry 'till all be covered.

If it happen that your Curtain is to be Crimson, you must trace it out with Lake, and lay the Ground with a thin Colour, observing where your strong Lights and Reflections fall, there lay the Lights with a thin and waterish colour, and the Ground being yet wet, lay the strong and hard Shadows close by the other Lights, with a dark Colour temper'd reasonably thick.

Thus having laid your backside, which in the same manner you may do with any Colour your next Work is, to lay your Linen of a fair White, and your Drapery flat with the Colour you intend it. Then take another view of the Face, and mark well what Shadows are too light, or too deep, and endeavour to reduce each Shadow to its due Perfection; then shadow the entrance into the Ear. and draw the Lines of the Eyelids the deepness of the Eyebrows, and all the most eminent Notes and Marks in the Face, doing them with a very curious sharp Pencil, and then heighten the Hair deepening it, as it appears in the Life, casting over the Ground some loose Hairs, which will look very pleasant, and make the Picture seem to stand at some distance from the Curtain.

In the shadowing your Linen, which ought to be very curious, use Black, White, a little Yellow, and a small quantity of Blue. The Black being deepned with Ivory black; to which add a small quantity of Lake or Indico: And thus much for the second Operations, from whence I proceed to the third and last.

*The third Operation, &c.* In this, only observe to give strong touches, where you see Cause, or find any Defect, taking more perfect Observations for



for the rounding of the Face, which at this sitting is better done than before, noting diligently what ever may conduce to Similitude, which is the Principal in the Work; as Scars, Moles, &c. Cast with the Eyes, Drawing the Mouth, &c.

In case of Ornaments, as Garments, &c. the Ground being laid with Bisse, then the deepening must be Lake and Indico, the Lightning White, very fine, faint and fair; and in the extream light places, let what has been said of the blue Drapery suffice, as may be understood of all other Colours; and for the greater Ornament, you may mix the Light with Gold or Silver, &c.

If the Body be in Armour, lay liquid Silver for your Ground, and when it is well dried and burnished, shadow it with Silver, Umber, and Indico, and work the Shadow upon the Silver, as the Life directs, &c.

For Gold Armour, lay liquid Gold for the Ground, and shadow it with *English* Oak, Lake, and a mixture of Gold.

For Peals, or that Colour, your Ground must be Indico and White, and the Shadow Pink and Black.

For Diamonds, lay a Ground of liquid Silver deepned with Ivory and Cherry-stone black. And thus much for the Face, Body, &c. as to the laying in Water-colour; and the next that present themselves are *Landskips*.

*Directions for laying Landskips. &c.* In this case always begin with the Sun-beams and Sky, the lightest part first, and then the Yellow, which must be compose of Masticote and White; the next your blue Skies with Smalt only, leaving no part of your Ground at first uncovered; but lay the Colours smooth all over, working the Sky downward toward the Horizon, still suffering it to grow faint, &c. as it draws nearer the Earth; and work the  
tops

tops of Mountains and other Objects very remote, so faint, that they may appear as lost in the Air; and as for your lowest and nearest Ground, it must be an earth colour of dark Brown, inclining a little to Yellowish and Green, as the matter requires, and the next a lighter Green, and so successively, as they lose in their Distance, you must abate in their Colour; nor must you make any thing you see at a great distance perfect, or absolutely what it really is, because it is altogether conjecture; you cannot absolutely discern it, but express it in Colours weakly and faintly, as your Eyes judges it may be. And ever observe in this case to place the light against the Dark; and so consequently the contrary, which is an excellent way to extend the Prospect far off, yet do it so as the Shadows may lose in their proportion of Distance, by degrees, their Force, as they remove from the Eye; observing further, that the strongest Shadow must be ever nearest. And thus much may suffice for Limning in Water-colours, which if duly observed and practised, will wonderfully help the Learner; And in this manner you may paint upon-Glass, by laying on the fairest Colours, if it appear through the Glass first, but if otherwise, lay first a Ground, and especially upon Copper.

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## C H A P. X.

*Directions for the most Curious Painting, or Limning in Oil, with the various Colours and Materials required on that occasion, with their manner of preparing and ordering, as also Instructions to Paint to the Life, &c. wonderfully pleasing, and much profitable to be known, as well by the Gentry, as those that intend it for their Profession.*

**A**S this noble Science in all Ages has been held in much Esteem and Veneration among Men, it is now more especially coveted to be known  
and

and practised by either Sex; wherefore for the better Instruction, especially of the Learner, have thought fit to lay down the following plain and easy Rules, which being well observed and practised, may in Time bring him to be a great Master in the Science. But first, of the Colours to be used on this Occasion, without knowing which, the rest may prove ineffectual.

The Blacks are Lamp-black, Sea coal black, Charcoal-black, Ivory black, and Earth of Colleen The White Lead only. The Greens, Verdigrease, Perra-vert, and Verditer. The Yellows are Pink, Masticote, Orpiment, Spruce Oker, *English* Oker. The Blues are Bisse, Smalt, Indico, and Ultramarine The Reds are Vermillion, red Lead, *Indian* Red, Lake and Ornotto. The Colours indifferent are *Spanish* brown, burnt Spruce and Umber.

These are the principal Colours to be laid in Oil and must for the greatest part of them be ground upon your flat Stone with a Muller, with Linseed-Oil; though as for Ivory, Spruce, Oker and Umber, they must be burnt before they are ground; and as for Masticote, Ultramarine, Verditer, Vermillion lamp-black, Smalt and Orpiment, you may temper them upon your Pallet with Oil, saving yourself the labour of grinding, &c. and as for those that are to be burnt, you must perform it in a Crucible; and though Linseed-Oyl be common to all, yet in case with your white Lead you are to lay Linen, you must mix it with Oyl of Wallnuts, by reason the other will in a short Time turn yellowish.

The next thing you are to take care of, is to have good Pencils of all sizes a Pallet, or Board, to lay your Colours on, whilst you are using them and an Eysil to lay your Cloth upon, or against, and a streining Frame, to which it must be nailed, and you must further have a Stay or Mollstick, which is made



made of Brasil, or such Wood as will not easily bend, about a Yard long, at one End of which tie a Ball of Cotton in a piece of Leather ; so that holding it in your left Hand against the Work, you may support your right Arm with it, whilst you are Working ; and being thus furnished, you may proceed to the Work, &c. And first of the Complexion.

*For a fair Complexion.* Take a small quantity of White, and twice as much Vermillion and Lake, temper these with the flat of a Knife's blade upon your Pallet, or Handboard, and use it for the deepest Carnation of the Face, adding moreover to a small part of it more white, and reserve that for a lighter Carnation. And yet another part being reserved, add more white to it, 'till it come to the lightest colour in the Face ; and then proceed to prepare the faint Shadows, and in doing it.

Take Smalt, and mix it with a little white, which may conveniently serve for the Eyes ; then laying aside the greatest quantity, add to the rest a little Pink, and these well tempered, will serve for the faint greenish Shadow in the Face ; then proceed to prepare your deep Shadows : And in order to it, Take Lake, Pink, and Ivory-black, a like quantity of each, and temper them together. And if the Face of the Party, or the Figure you are to copy require redder Shadows than what you have tempered, add more Lake ; if yellower, more Pink ; if bluer or greyer, then add more black.

Thus having prepared your Pallet with colours suitable to a fair Face, consider again, in case the Complexion be more brown or swarthy, you may temper the colours as before putting moreover a little quantity of burnt Oker amongst your Lake Vermillion and White, that it may look somewhat tawny amongst your heightened colours. In this case temper a little Oker, so much only as will just turn it, and for your very deep and very faint

faint Shadows, you may use the same as for the former Complexion.

For a tawny Complexion use the same in the general, as before, only let the Shadows be prepared of burnt Oker and Umber.

For an absolute black Complexion, your dark Shadow must be as the foregoing; but as for your heightnings, you must take burnt Oker, Lake, with black and white, yet but a little of the latter, must be put in at first, that you may the better work it up by degrees: And note, that the single colours laid at first upon your Pallet well tempered, according to the foregoing Directions serve for Shadows for all Complexions.

## C H A P. XI.

*What Pencils are to be used in painting a Face, and how to dispose them. Directions to paint a Face in Oil Colour, and what Mixtures are requisite for Garments, &c.*

**Y**OUR Pencils, how small soever, ought to have a Stick about nine Inches long. cut or sharpned at the farthest end into a point, and when you are to draw any Face, lay together two Duck's-Quills, Fitch-Pencils, two Goose-Quills fitch, two pointed, and two bristled, the pairs being exactly alike, and when you are to use them, having your Pallet in readiness upon your Thumb, take them in your right Hand, and put the ends of your Sticks into your left Hand, keeping when you work, the hairy ends at a distance, lest the colours intermingle, and so proceed to your work, viz Your Cloth being ready primed, and strained upon your Frame, scrape it over with a Knife's edge, not very sharp, to take off the knots, if any appear, and so set your Frame and Cloth upon your Eysel a convenient height, so that you sitting upon a Stool level with the Party or Copy you draw,

may

may the better have the picture equal, &c. placing it according to your Light, as I have directed in Water Limning; then with a piece of Chalk draw the proportion of the Face upon the Cloth, making the place for the Eyes, Nose, Mouth, Ears, Hair, &c. Then take a Swan's Quill pointed pencil, and begin with some of the lightest colours in the lightest part of the Face, (the Cloth before being primed, or Ground laid) as the heightening of the Forehead, cheekbone, Nose, &c. on the lightest side, and when you have done that, next proceed to the mean parts, viz. those not altogether so light, as the cheekbone of the fore shortening or dark side; the chin and upper Lip, and by Degrees come to the reddest part of all.

Having thus far proceeded, lay the greenish faint Shadows in Places convenient, and where you see Cause to moderate the harder Shadows; but have especial Regard not to place the Green where the Red should be: And so all the faint and light Beginnings being put on, take a Duck's-quill fitch'd, and a Goose-quill pointed Pencil, and begin at the Eyes to shadow with Lake, and trace out those Parts of the Face therewith that require it, as the Eyes, Nose, Mouth, the compass of the Ears, &c. and, do this before you lay on any Colour, lightly wiping it over with a Linen Rag, to prevent the overcoming of other Colours.

Having now put in all the Colours dark and light, take a large fitched Pencil, and sweeten the colours: That is go over the several Shadows with a clean soft Pencil, which by a gentle and dextrous handling will force or drive the colours into each other, so that they will represent the laying on at once, and not at several Times. This being done, begin again with your clean Pencils of such bigness as the Work requires; then the Party sitting in the Posture as before, take a curi-



ous View, and see what defects you find in the Work, and amend them; after that proceed to heighten or deepen your Shadows, as the Nature of the Piece requires, and if a Beard or Hair be required, take a Goose-quill brittle Pencil, and put in the Hair about the Face, and rub in the greater Brittle, heightening it up with your Goose-quill Pencil, and so your Work is done.

If Garments are required called by Artists Drapery, for a red Garment, lay dead colour with Vermillion, glaze it over with Lake, and heighten it with White. For Scarlet, Vermillion must be the lightest, deepened with Lake or Indian Red. For a crimson velvet, lay burnt Oker, Vermillion, or Indian Red, glaze it with Lake, and touch it up with Vermillion. For a sad Red, heighten Indian red with white, and let all your deepenings be with Black, Pink, and Lake well tempered. For green Garments, heighten Bistre and Pink with Masticote, and deepen it with Indigo and Pink. For green Velvet, lay the dead Colour with white, and a little Lamb black; glaze it with Verdigrease, deepen it with Indigo and Pink, and heighten it with Pink and White. For yellow, take yellow Oker Masticote and Umber, lay the dead Colour with Masticote and White in the highest Places, and with white and Oker in the meanest, and with Umber in the darkest, glazing it when dry with pink.

For blue Garments, take Indigo and white, laying first the white in its due places; and then your mean colour, viz. Indigo and white well tempered, in their due places; then deepen it with Indigo, and glaze it with Ultramarine when dry, &c.

For purple Garments, take Oil, Smalt tempered with Lake, and white Lead, and heighten it with the latter.

For black Garments, let the dead colour be

Lamp-

Lamp-black, and a little Verdigrease, and when it is dry, go over it with Ivory black, and having heightened it with white, go over it with Ivory black and Verdigrease.

For Orange colour Garments, mix red Lead and Lake, laying the lightest parts with red Lead and white; the mean parts with only red Lead, and the deeper with Lake; and if need requires, you may heighten it with white.

For cloth coloured Garments; for the ground, take Umber and white, for the deeper Shadows, Umber and black, and for the mean Umber and Oker, and whiten it with Oker and white. And thus much may suffice for Limning and painting of these Kinds.

## C H A P. XII.

*The curious and mysterious Art of Etching and Engraving in Gold, Silver, Copper, Steel, &c. displayed and made manifest in easy and plain Rules and Methods, by which an unexperienced Person may attain to the Knowledge thereof, and the expert be wonderfully improved, &c.*

**T**O introduce this curious Art, I think it convenient to begin with Etching, the better to give a Light into what succeeds, &c. and first of the Ground.

In this case, procure three parts of Virgin's-wax, and one of Asphaltrum, one part of Maltick, and one part of clarified Rosin, put all but the Wax, putting that into a new glazed Pipkin or Pan, and let it boil over a gentle Fire; at what Time put the other Ingredients to it, which being melted, pour it out into fair cold Water, keeping back the dregs; and when it is cold, work it into a Ball, tie it then in a Rag so close, that no dregs may come through, and use it upon your Copper as you have Occasion.

In preparing your Copper, observe that it be well polished, not lying higher in one place than another, nor no where uneven, and if you espy any specks or disorders in it, coal it over with a well burnt Charcoal and fair Water, and set it aslope to dry ; which done, scrape some very dry Chalk or Whiting upon it, and rub it over with a Woolen Rag, not touching the Face of the Plate with your Finger, till the Ground be laid, which may be done in this manner, viz.

Put lighted Smallcoal into a Chaffing-dish, and lay the Plate on the wrong side over it that a gentle breathing of heat may come through ; then take your Ground in the Rag, and rub it gently up and down the Copper, till it coming through the Covering, by reason of the heat, may sufficiently cover the Plate, not too thick nor too thin ; and then whilst it is warm, take a Duck's Feather, and smooth it to an exact evenness, but beware the Copper be not too hot, for if it soak, the Moisture of the Ground is gone ; and then in Etching it will crack and fly up ; and when it is according to your mind, suffer the Plate to cool ; then grind a piece of white Lead in Gum-Water, not very stiff, and make the White of convenient stiffness, to wash over the first Ground of the Plate with a Brush dipped therein, till you perceive it every Way smooth, going over it with another Brush of soft Furs, and so let it dry.

The Ground thus laid, take your Draught after which you are to work, and scrape on the back-side of it some red Chalk, moving it all over, and scrape over that some Smallcoal, very fine, suffering it to mingle with the Chalk ; and then with a Pencil or Hand-Brush rub it up and down till it be smooth and even, and so place your Design upon the Plate, and with a blunt Needle, or Steel point, draw over the out Stroaks ; and then you must



must have several Needles, according to the smallness or largeness of your Stroaks in the Copy and with them in a Tin-pencil, Frame or Stick, according as the bluntness or sharpness requires, take out all the black Stroaks, pressing so hard, that the Needles may pass through the Ground, and make some small Impression on the Copper, ever observing when you lay by your Plate, to wrap it up in a Paper to prevent Scratches, or the Air spoiling the Ground, wiping away, as you work the Ground the Needles brake up, with a light Pencil, not suffering the Ground to lie too long on the Plate before you finish, for the Air drawing out the Moisture of the Ground, the Etching will appear broad and deep, working off black and unseemly; or when sometimes you suppose it eaten sufficiently, you will find it defective in many places, and in frosty weather you must wrap the plate as well in a Blanket as in a paper, for if the Frost take the Copper, the Ground will start from it, and so the Aqua-fortis will spread under it, and keep no certain form.

Having observed these Directions, take green Wax, and melt it in a new Pan or pipkin, and with pencil cover the edges of the copper, and stick the Wax round about like a Wall, to keep in the Aqua-fortis; that done, and it being firmly stuck on, take the third part of an ounce of Aqua-fortis, and break it with other water of the same kind, that has been once or twice used, taking at least two parts of the old to one part of new; and in case you have no old Aqua-fortis, then instead of it, use strong Whitewine Vinegar as a Mixture, and for such Figures or Things as you would have fine and sweet, you must pour out your Aqua-fortis into some earthen Vessel, and then wash off what remains with fair Water, and suffer it to dry; then melt Candlegrease, with a little ground,

and with a pencil cover the places you would have lie faint; then pour on again your Aqua-fortis; and so continue to do as often as you can conceive it convenient: then melt off the ground over a gentle fire, and with a clean Rag wipe it off, and you will have the perfect Impression of the Copy on the Plate, which you may work off at the Rowling Press to serve your Occasions. And thus you may do upon any Metal the Water will take, &c.

From Etching, I proceed to the Art of Engraving, and he that would be expert herein, must have a Regard to true drawing; wherefore, I would advise the unskilful well to consider what I have laid down of that kind, and so provide himself with Materials for the Performance of this curious Art.

In the first Place, be sure to chuse a good Oil-stone, free from pin holes or flaws, not too hard nor too soft; therefore the better to furnish yourself aright, you must consult in what the strefs of your Business will lie; for if you intend picture or Letter Work, accounted more curious than Marks, or Arms used by Goldsmiths and pewterers, you must have your Gravers accordingly shaped and tempered; for Goldsmiths, &c. Gravers are frequently crooked, the better to come at hollow places, &c. but for Copper, or any plate, that may be easily come at, the strait Gravers are ever held the best, and if you suspect their Goodness, try whether or not they are File proof; and if so, they will fit your purpose, though at first, by reason of their temper, they may appear brittle, and sometimes break short, yet being ground out, they will still grow better and better, and come in a little Time to an excellent Temper.

As for the Forms of Gravers, and their Use, the Square one makes a broad Shadow Stroak or Hatch,

Hatch, and that which is in Form of a Lozenge a narrow deep one, the one being appropriated to large, and the other to fine Stroaks, yet if your Work be curious, a middle Size between these will the better accommodate you, which will render your Stroaks or Hatches more graceful, and yet carry with them sufficient Force and Vigour.

In case of whetting your Gravers, which is frequently required, pour a little fine Olive oil upon your Stone, and laying that Side which you intend shall cut the Copper, flat upon it; whet it very flat and even, and to that purpose, carry your Hand very steady, continuing an equal Strength, and placing your Fore-finger firm upon the contrary Side, so that you may have more power to guide it with exactness; then turn the unwhetted Side, and use it in the same form and manner, that these may be a very sharp Edge; then turning uppermost that Edge, which in the former manner you have whetted, setting the end of your Graver obliquely upon the Stone, bear your Hand with an exact evenness, to the intent it may appear very flat and sloping, in the form of a Lozenge: and in this you must take great Care; for if it be not well and rightly whetted, you can never grave well.

Observe when you have a Graver whose handle is a round or oval Knob, if you would prevent it from running into the Copper, or the other Metal you grave, further than is convenient, then must you cut off that part of the Knob which lies in a Line with the point of the Graver, and make it as level as you can with the point; nor then will it hinder your Hand from carrying an even Streak, which otherwise it will do, especially in working a great plate, by bearing too much upon the Copper; and in holding it, place the Knob-side, or that part of the Ball not cut off, in the hollow of your Hand, extending your Fore finger towards



towards the point, and laying it opposite to the Edge that is to cut, and place your other Fingers on the one Side of the Handle, and your Thumb on the other Side of the Graver, in such a manner, as with ease you may guide it flat and parallel with the Plate, being ever very careful that your Fingers do not interpose between the Plate and Graver, lest it hinder you in carrying it level with the Plate, by hindering you from making your Stroaks with freedom and neatness.

Further, to fix you in this Affair, you must have a strong round Cushion of Leather filled with Sand, about half a Foot over, and four Inches in the Diameter, rising a little in the middle, and sloping towards the Brims, but not much, and this must be to lay your plate on, that you may turn it at leisure ; and if you are to make straight stroaks, hold your Graver in a direct Line ; or in case you would have your Stroaks broader, and deeper in one place than in another, you must lay more or less Stress, as you see Occasion, observing in all straight Stroaks to hold your plate steady and firm upon the Cushion and the Table, or Bank on which it stands well fixed ; but in crooked and winding Stroaks you must hold your Hand and Graver stedfast, and only turn your plate, or otherwise you cannot command your Hand to that neatness as in many Cases is required, observing at the same Time, for the more steadiness, to keep your Elbow fixed upon the Table, and your Eye on the plate, scraping your Work as you go, with the Edge of a Burnisher, to take off the Roughness ; yet be careful that you make no Scratches, and the better to see what you have done, rub the place over with a piece of black Felt dipped in Oil ; and if any Scratches appear, with your Burnisher rub them out ; and if any Stroaks be too hard, in the same manner you may make them fainter.

fainter. And in case your Graver should happen to appear very hard, which by its excessive brittleness in often breaking is known, lay it upon a burning Charcoal till it grow yellow; and then dip it in Water, and it will, by often so doing, render it of a better temper, but if it be blunt in a short Time cutting, then it is too soft, and you must heat it in the Fire, and dip it in Lime-juice, or Vinegar; and thus much for the Management of the Tools, &c. the which, by a little practice will soon grow natural.

Another material Thing in this Art is to be considered, which is, take the Impression you are to cut or grave upon your Plate; and in this Case heat your Plate over a Fire of Small coal, and having a Piece of fine Bees-wax ty'd up in a fine Rag, worked like a Ball, that it may fit close, wipe the Plate over with it, when it is hot enough, very lightly, till you perceive it is covered with Wax, very thin and even, laying it with a Feather, in which at first you may find some difficulty, but Use will render it easy; and in this Case, if you are to imitate an exact Copy, it must be so ordered, that it may stand the contrary Way on the Plate; and therefore, in Consideration thereof, your best Way will be to black it over with a black Lead Pencil, especially in the Case of a very old Picture, which being done, take a Piece of polished Ivory, and placing your Picture exactly on your Plate, the Print side downward, rub it lightly, and you will perceive the exact Proportion of the Print remaining upon the Wax Plate; then take a Steel Point and over each particular Limb, &c. especially in the out Stroaks, and there will be but little difficulty to mark the Shadows which lie before you as you engrave the Work, and the readier it will be, if so you note how far  
your

your Shadows should be dark, and how far light, with your black Lead, before you rub it off.

The carrying of the Hand in this kind will at first seem difficult, as to the depth of your strokes; but in general observe, ever to carry your Hand with such a Slight, that you may end with the same faintness, or darkness you begin; and in case one Part require more deepness and blackness, than another, you must do that by degrees; and that you may the more expertly do it, observe that your Strokes be not too close, nor too wide; and therefore to bring your Hand in the better, practice at first by such Prints as are but loosely shadowed. lest by a tempting to imitate those more dark and close, you happen to be puzzled where to begin, and where to end, but Practice will inform you.

As for Letters; in Case of Copies, the Letters must be gone over with ungummed Ink, or with black Lead, and laid on the Plate when waxed as the former, unless you are so dextrous at Writing that you can draw them by Hand, or with a Steel Point on the Plate, in true Cut.

But if a Map, or other Mathematical Instrument, be required, every Circle or Perpendicular must be drawn over as before, or you cannot exactly imitate. But in case of a Face, or Coat of Arms, or Instruments not to be painted, then you may black over the backside, as in Etching; but you must use for engraving a Wax ground.

### C H A P. XIII

*The Mystery of cutting in Wood, laying Gold or Silver, solid or liquid; preparing Colours for the painting of Pictures, or Prints; refreshing old Paintings, or Pictures; colouring Maps, Buildings, Landskips, and many other curious Things.*

*As*



*As for cutting in Wood, in relation to Pictures, or the like.*

**Y**OU must prepare your Wood in the Manner of a plate, though an Inch thick, or according as the Design requires, either Box or pear-tree, rendering it by planing as smooth and level as a piece of paper; which done, having a Draught of your Design, you must rub the Wood gently over with a ground paste made of the finest Flour; and then fix your Draught, or Copy upon it; when suffering it to dry, rub the backside of the paper, which must be uppermost, with your wet Finger, till you crumble it off so thin, that the print plainly appears upon the Wood, as if it had been painted or drawn thereon with a pen or pencil.

Having thus prepared your Wood, if it be small, fasten it up with Quoins, that it move not, unless there be occasion, or as the Stroaks require, and then having a fine small Knife, in the Nature of a pen-knife, but much less and thinner, especially for the fine stroaks, cut out all the white Stroaks and Ground, and suffer the black ones to stand, sharpening the fine Stroaks, and bringing them to an Edge that they may not print black or dull; and above all, be sure to do it with so light and curious a Hand that you break none of them; for if so, you must deface and hinder the Work, they not being to be repaired; and further observe to leave a good Foundation to the Stroaks, though never so fine at the Top, least by the force of the press, they break in the working.

You may have your pattern, or Advice, if it be new, drawn upon the Wood with black or red Lead, though the former Way is the securest from being rubbed out, or injured, &c.

*To write or gild with Gold and Silver, an easy, and curious Method, &c.* If you would have fair Letters appear in Gold or Silver, take Gum-Ar-  
moniack

moniack, and grind it with a little Juice of Garlicke, and put thereto a few drops of weak Water of Gum-Arabick, and so make it to the thickness of Ink, that you may conveniently write with it, and so write or draw what you think convenient, and suffer it to dry a little, but not too much, lest it take not the Gold or Silver; nor too little, lest it drown them. Then lay your Gold or Silver in Leaf upon a Leather Cushion, being a piece of Calf's Skin stuffed, with the rough side outwards; and so with a sharp Knife, cut it into what proportion you will, suitable to what you have written, and taking it up with a piece of loose Cotton Wool, on which you have breathed, cover with it the place intended, pressing it down hard, and where the Gum Water is, it will take it, then brush away with other Cotton what it has not taken, and being dry, burnish it with a piece of polished Ivory, and it will appear very splendid.

*To write or gild with liquid Gold or Silver, &c.* Take Shell Gold, which is made of the ragged Edges or Cuttings of Leaf Gold; and when you are desirous to use it, put it in a little fair Water, tempering it up with a clean pencil, and lay it on with a pen or pencil in what form you please, either by Way of Writing or Gilding; and when it is dry, rub it over with a Dog's, Calf's, or Horse's Fore-tooth, and it will be very shining and pleasant. And of this, as of the former, you may lay on more or less, either for the gilding picture Frames, Coaches, Rooms, or the like. As for Lacquering, it only consists of carrying a pencil dipped in rectified Spirits over Leaf Silver, which changes it to a Gold Colour.

*How to prepare Colours, to colour printed Pictures, and thereby render them Beautiful.* For a curious Violet colour, take Turnsole, being a Dye infused into a piece of Linnen Rag, beat it in Vi-

negar,

vinegar, and it will give you the Colour desired, after which dissolve in it some Gum-Arabick, and use it as you see fit.

For a curious Yellow, take Gum-booge, and dissolve it in fair Spring-water, over a gentle Fire.

To make a transparent Red, take Brazile, grind it, and heat it over a Fire with small Beer and Vinegar, put in a little Powder of Allom and Gum-Arabick, and suffer it to boil till it taste strong, &c.

For a transparent Purple Colour, grind Logwood, and boil it in all respects as the former.

For a curious Blue, take fine Litmos, and cut into small pieces, lay it for the space of twenty four Hours in a weak Lake Gum water; to make which you have been before directed, and it will answer your Expectations.

To make a curious Green, take the Juice of Rue, and a little Verdigrease.

For a light Green, take *Sap-green*, *Flower de Biss*, or Tawny-green, and steep them in fair Water.

To shadow Greens, steep Indico and yellow Berries.

To shadow Blues, take Litmos and Indico, steeping them in the Lees of Soap-ashes, and use them with Gum-water.

To make a good Brown, take Ceruse, red Lead, Pink, *English Oker*, mixing them with Gum-water.

For an Orange colour, take red Lead, and yellow Berries, and mix them with Gum-water.

For a curious Flesh-colour, take white Lead, red Lead, and Lake with Gum water.

To make a Colour for precious Stones, take Verdigrease and Varnish for an Emerald, Florence Lake for a Ruby, and Ultramarine for Sapphire.

*How to Colour Maps, and what is to be observed therein.* In this case, as well as in other printed Pictures, 'tis no more than to set them out in their



proper Colours, which you must accordingly consider, as the nature of the Thing requires, it being impossible to direct in particulars; however observe, the Water must be a faint Blue, Sky somewhat deeper, Trees Green, Houses in Maps are usually red and Ways yellow and green: And to these and the rest suit any Water-colour you think suitable, mentioned in this Book.

*Colouring for Landships, and Buildings at large very proper.* In Landships, for the saddest Hills, use burnt Umber: for the lightest put some yellow to it; and for other Hills, lay Copper green thickned on the Fire, or in the Sun; and for those further off, mix with it some yellow Berrie, and let the fourth part be done with green Verditer, and the farthest and faintest places with blue Bisse; for the lightest places, use white, and shadow it with blue; as for the Highways, do them with white or red Lead, using for variety yellow Oker, shadowing it with burnt Umber; and it may likewise be used for sandy Rocks and Hills; and as for other Rocks, you may lay them with several Colours; but at a distance they must appear blue, as in the Air; as for the Water, do it with black Verditer, and white, shadowed with green, and with blue Verditer when the Banks cast a green Shadow upon the Water; but when the Water is dark in the Shadows, shadow it with Indico, blue Verditer and green, &c.

*How to Colour Building, &c.* In colouring Buildings, you must use much Variety, the better to set them off; yet not so as they may appear extravagantly adorned, or contrary to the Use of this kind; but for Walls and Conduits use a mixture of white and black, as likewise for other materials; but if a Brick-house, use red Lead and white, and where the Houses stand thick together there use sundry Colours suitable to the occasion.

*To cleanse old Pictures, and render them fair and pleasant.* Take Wood-ashes, the whitest may be had, sift them thro' a fine Lawn sieve, and with a Sponge and fair Water wash the Picture gently over, not rubbing it hard, least you impair the Shadows which being done, and the Picture dry, take distilled Varnish and rub it thin and gently over, and it will create a lasting Freshness; or for want of this, you may do it with the whites of Eggs exceeding well beaten, or with Gum-water: But note, the Pictures to be thus used, must be such as are laid in Water-colour Oil.

#### C H A P. XIV.

*Instructions for restoring Tapestry Hangings, Carpets, or Turkey chairs that are faded or decayed, to their lively Colour; to prepare Flock Cloth for Hangings; Spanish white, Size, Allom water and Gum-Arabick water, how to make them; as also to thicken Cloth for Skreens, &c.*

*To refresh Hangings, or Tapestry, Carpets, or Chairs.*

**B**Eat the Dust out of them in a dry Day, as clean as may be; then rub them over well with a dry Bruth, and make a good Lather of Cattle or Cake Soap, and rub them well over with a hard Brush; then take fair Water, and with it wash off the Froth, and make a Water with Allom, and wash them over with it, and you will find, when dry, most of the Colours restored in a short time; and those that are yet too faint, you must touch up with a Pencil dipped in suitable Colours; and indeed you may run over the whole piece in the same manner with Water Colours mixed with weak Gum water, and it will cause it, if well done, to look at a Distance like new.

*To make Flock Cloth Hangings, &c.* To do this, take a coarse Canvas, spread it even upon a Floor or Table, then Flocks or Shreads of Woolen, grind them as small as Dust, and having sized over your Cloth with a good strong Size, sift whilst it is wet the Flock through a Sieve very fine, and having done it even in all places, run a Rollar of Wood or Iron over the piece, to press them down close, and so suffer them to dry in the Shade, lest the Sun or Fire parch and make them crack, and when dry, brush them lightly over with Allom-water; and so draw your Design with black and red Lead, Charcoal black, or any other Colour your fancy; and it will at a Distance look like Tapestry, and be very lasting in a Room where no great Fires are made.

*How to thicken Linen Cloth for Skreens, Bed teastars, and the like.* Grind Whiting with Size, and to prevent its cracking, add a little Honey to it; then take a soft and smooth Brush, and lay it upon the Cloth, and so do two or three times, suffering it the mean while to dry between layings on, and for the last laying, smooth it over with Spanish white, laid with Linseed oil; the Oil being first heated, and mixed with a small quantity of the Litharge of Gold, the better to endure the Weather, and so it will be lasting.

*How to make Spanish White.* Take fine Chalk with a tenth part of Allom, grind them with fair Water till very soft, and then bring them to a thickness and make them up into Balls, lay them to dry leisurely, and then heat them well in the Fire, and so use them.

*To make a very good Size useful upon sundry Occasions, &c.* Take Glue a pound, steep it in four gallons of Water 'till it be dissolved; then take a pound of the shreads, or cuttings of Gloves, or



or other the like Leather, and boil them in the Water where the Glue has been dissolved, over a gentle Fire, 'till it feel very clammy between your Fingers, and when that is done, strain the liquid part through a Sieve, and keep it for your use.

*To make Allom-water the best way.* Take a pound of Allom, bruise it, and put it into two gallons of Water, adding a small piece of Gum Arabick; and having scummed it after a gentle heating, from the Froth or Scurf, strain the Water, and keep it for your use; and especially to wash over printed Pictures lightly before you paint or colour them, by which means, they being afterwards suffered to dry, the Colour will be prevented from sinking or soaking in unseemly.

*To make Gum Arabick water for all Occasions.* Take of the transparent or white Gum two ounces, half an ounce of Allom, and two quarts of Spring water, dissolve the former in the latter over a gentle Fire, scum it, and take away the dross, and so use it with Colours, or in making Ink, or the like; and if you perceive it too strong, you must put more Water, but if too weak, then more Gum, taking out the Dross as before.

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## P A R T II. C H A P. I.

*Metals and Minerals, their Quality and Generation; from what they proceed, and how produced; the Art of transmitting and making artificial Metals on Minerals, with other material Matters.*

**I**N case of Minerals, and all Things inanimate, center'd or continued in the Bowels of the Earth, it is convenient to reduce them to four Kinds of Mixtures, *viz.* Metals, Stones, Earth, or Juices, Nature producing them with Mixture and Participation of each other. And here by Earth I mean the simple Element only, of which as the Philosophers affirm, all sublunary Bodies are compounded, and though the Earth, according to the Situation of Countries, and Differences of Climes, differs in Scent, Colour and Taste, yet that proceeds from a Mixture of some other part, or Effect of the former; the pure elementary Earth being in all places one and the same; in which, and by the Operation of Heat and Moisture, the others are generated; and as there are more or less of these, the Metals are finer or courser: But to come nearer to our Purpose.

Gold is found in Grains or Sand, and Silver in Veins, and sometimes twisted and wreathed like Branches of a Vine; and at other times these Metals are found in Stones, with whose hardness they have incorporated themselves, and being broken, are with *fining* Materials extracted. As for Gold, it is the most perfect of all the inanimate Bodies, and has its Generation, as I have said, from Heat and Moisture in the Original; but so parts, so well contracted and compacted by Concoction, that it is in a manner incorruptible, it being beyond the Power of any Element to prejudice or destroy it; for the Fire of the most subtle and

and piercing Quality, consuming all other Metals by long Application; renders Gold more pure, nor can the Air, Water, or Earth diminish its Lustre, but that it will again recover it; by which means it has deserved the Estimation the World affords it; and is so ductil, that being expanded, an ounce, of pure Gold will cover a place of twenty or thirty Feet square.

Silver, as hinted. carries a fineness next to Gold, wanting little more than the Colour to be brought to its Perfection; wherefore those that strongly enveigh against the Transmutation of Metals, have been convinced that there is a possibility to turn Silver into Gold, by reason Fire and artificial Concoctions may supply the Defect, of which there have been many Experiments; and from the even mixture, good temperature and fineness of its Parts, it is not only ductil and maleable, but endures the Fire with little waste; and admirable it is, that an ounce of fine Silver may be drawn out into a thousand four hundred Yards, and that too for the most part without breaking; and all this Extension may be gilded with six grains of Gold.

Copper is a Metal to the composition whereof a great quantity of Sulphur is required, and from a distemper'd Heat in the mixture, the fiery Heat proceeds, and being over burnt in its Composition, it is therefore less subject to Corruption, and is used about Engines of long continuance, because it rusteth not, and is found in mineral Stones of divers Colours, tho' the most effectual Colour is green or blue; and so often is it engendred near Gold and Silver, that many times following a Vein of it, much pure Gold, and oftener Silver has been found; and such Veins of Copper as make a superficial Shew, are (upon being digged) richer the deeper you go, which is occasioned by the moisture; and many times pure Silver is at the bottom, &c.

Iron,



Iron, tho' very common, which lessens its esteem, and may be termed the Wall and Bulwark of Kingdoms, the Safeguard of private Persons, and the Handicraft Tradesman's *unum necessarium*, for without it few Employments can subsist. As for its extraordinary hardnels from over-much earthy Parts, or fixed Sulphur in its Composition; not, but it has a proportion of Quick-silver in it, so that it will not without a very violent Heat be melted, nor will it break, but expand by force of Hammers, or other Violence, and receive an Impression by dilating itself: and altho' it is cold and dry, yet by reason it is more porous than other Metals, it is of less Weight, and consequently subject to be consumed by Rust.

Lead is frequently found in the Silver-Mines, and indeed as often by itself, nor scarcely is there any Ore, but some quantity of Lead is found in its Mixture, as being by the Abundance of its humidity serviceable to it, and especially in the melting of Gold and Silver, which cannot conveniently be done without the help of Lead; for in this case, by reason of its Moisture, it does easily evaporate, carrying with it whatever is not Gold or Silver, and in its weight comes nearest to the former, viz. Gold, and in Colour to Silver, not being subject to Corruption as Iron

Tin is begotten, or degenerated, by a grosser sort of indigested Quick silver, though much finer than Lead, by which means it becomes more white and hard, though from the ill mixture of its Substance, it is accounted the Bane of Metals, making them brittle by never so small a mixture; and the reason is, that by its incorporation it hinders the ductility, and disorders its former equal temperature; except in Lead, with which it better agrees, by reason of

the

the moisture and softness; so that being incorporated, they become ductil and mealeable.

Quick-silver is of a liquid penetrating Substance, and greatly in Use, especially in refining Metals, agreeing with any sort, abounding with much humidity, which gives it brightness and weight, and is held the principal of the Generation of Metals; nay, its very Substance is transmutable into metals. enduring as well as those that come out of the Mines, the Trial of the Fire and Hammer.

There are sundry Metals, called artificial Metals, made by Mixture of Minerals. As from a Mixture of Tin, Copper and Brass, Bell metal is made; as also for Pieces of Ordnance, and sundry other uses; and in this case, a Pound of Tin must be put from four to eight pound of Copper, according as you expect it, britler or tougher

Latten is made of Plates of Copper, put into Crucibles, and covered with Powder of Jalamina, or a kind of half mineral Sulphur strewed over it, and upon that the Powder of beaten Glass, to which Fire being put, and the stem, or greatest force of it kept in, it alters the Colour of the Copper to a brassy Quality, and adds in Weight eight Pound to the hundred.

Pewter, a mixture of Lead and Tin, and has sometimes in it, for the better hardening and keeping it together, a small Quantity of Brass or Copper: And thus much for the generation and description of Metals, which the Earth so abundantly produces for the Use and Benefit of Mankind.

## C H A P. II.

*Instructions for softning and hardning Metals and Minerals suitable to sundry Occasions, used in Tools, Engraving, &c. The Art of Soddering, Gilding, Burningishing, and the like upon Metals, &c.*

*To soften Steel or Chrystal.*

TAKE

**T**AKE of unquenched lime a pound, and as much of soap-boilers ashes, and having made ley therewith, put your steel or chrystal into it for the space of twenty four hours, and it will easily be cut, or otherways ordered &c.

*To soften brittle and stubborn Iron.* Take the juices of colt's foot and hemlock, and when your iron is hot, steep it therein, and it will become ductil, or you may do it by often quenching in linseed-oil.

*How to make a Powder to soften Metals.* Take your metal and heat it well; then take ground, or beaten glass, common salt and brimstone, and sprinkle them upon your metal whilst it is red hot, and afterwards burn them off in the fire.

*To make Iron or Steel as soft as Copper, the better to engrave upon, &c.* Take chalk and allom, bruise them well together, and being wet with the juice of an onion, daub it over your metal a Finger thick, and thrust it into the fire, suffering it to burn till it become clear, and it will answer your expectation.

*To make iron or steel so soft, that you may twist it at pleasure.* Take the gall of an ox, mix it with oil of turpentine and urine, heat your metal, and strow upon it powder of vitriol; then wash it over with the materials before mentioned, till it comes to be somewhat cool, and it will be very flexible.

*Instructions to harden soft iron.* Take the concoction of vervein, houghleek juice, the juice of horehound, radish or rue, dissolve in them some allom-powder, and the business will be effected, if you anoint your metal when hot with the liquid part.

*To harden all manner of iron tools or instruments.* Take the leaves or juice of cinquefoile, or five-leaved grass, or the juice of a lemon, or white-wine venegar, and dip the pieces of metals or tools in it when hot; and do so often, and you will find the advantage.



*To make iron as hard as steel.* Take the juice of Roman nigrel, and moule-ear, herbs so called, and strike the metal, being hot; and by this means tools may be made of it that will cut iron.

*To harden metal so that it shall not crack nor flaw, &c.* Take oil of spike, and mutton suet, and daub over the metal hot; then plunge it suddenly in cold water, and the business will be effected.

*To harden augres, files, chizels, mattocks, &c. for use.* Take the juice of radish, or coleworts, mix it with ley made of soap ashes heat it over the fire, and when your tools are well heated, or red hot in the fire, quench them in it.

*To make tools so hard that they will cut Iron, Copper, &c.* Take salt-petre and copperas, strew them in powder upon the tools when red-hot, and then quench them in the distilled water of shell-snails, and your expectation will be answered.

*To colour or varnish, tin, copper, or the like metals.* Take half a pint of linseed-oil, warm it over the fire, and scum it; then put therein bruised amber, and alccæpaticum, of each a quarter of an ounce, and suffer them to boil up to the thickness of an ointment; after that, set them in a close earthen vessel under ground for the space of 4 days, and when you use it, strike over your metal with a brush or pencil, it being at the same time not over a pan of small-coal, and it will be of a curious amber, or golden colour.

*The manner of gilding upon metals.* Take wine-stone, verdigrease, and sal-armoniack, seeth them in white-wine, with some common salt, strike over the metal, indifferent warm with the liquid part, and suffering it to dry a little, take water of leaf gold, and lay it on, which by the virtue of the washing will stick fast, so that with a burnisher of ivory you may finish it in its proper lustre.

*How to make a water for the gilding metals.* Take  
3 pints

3 pints of spring water, 3 pints of roch-allom, an ounce of Roman vitriol, as much verdigrease and orpment, boil and scum them; and then put in water of tartar and bay salt, of each 2 ounces; and when the ingredients are well dissolved, and come to a thicknes, strike over your metal therewith, dry it against the fire, and burnish it.

*How to gild iron or steel with quick silver or gold foil.* Take vitriol and sal armoniack, of each an ounce, of allom 2 ounces, beat them fine, and boil them to a thicknes in fair water; add a dram of verdigrease, and half an ounce of sublimatum, and spcer over your metal with it; when having mixed your gold and quick-silver together, lay them on with a leather spatula as smooth and even as may be; then suffer the varnish to take it, and burnish it over.

*To make iron, or the like, a curious blue or steel colour.* Burnish your metal to a brightness, and take cows-hoofs, burn them, and hold the metal over the smoother or smoak of it, and it will answer the end designed, &c.

*To make copper, &c. a silver colour.* Take bay-salt, allom and winestone, grind them to powder, adding in your grinding some leaves of silver, and put them into an earthen-pot, close stopped with your copper amongst it; then take it out, rub it over with some of the powder, and burnish it.

*A very good way to burnish iron, or other metals.* Take of alcæpaticum, citrinum, and amber, each an ounce, make them into powder, place them over a gentle fire in a well glaz'd pot; and when you perceive it melted, put to it a quantity of scalding oil, and when the mixture is well made, let it cool; and so your metal being glowing hot, lay a little piece upon it, and rub it over.

*To make a good sodder for iron, or any hard metal being cold.* Take of sal armoniack 2 ounces, 2 ounces of common salt; the like quantity of winestone in powder,

powder, 6 ounces of thick ground glass, 2 ounces of clock spike; bruise and mingle them well together, and so put them into a linen cloth, and suffer the cloth to be laid a finger thick with soft clay, encompassing it on the outside, and put them into a well glaz'd earthen pot, with a lid or cover, and put that into another larger pot of earth well covered, and suffer them to stand over a gentle fire that the heat may encrease by degrees, till all be red hot, and run; then suffer it to cool, and break it small, and grind it to powder: Then in case of soldering, make your iron fast, and joints close laid, lay a paper under them, and upon it some of the powder, as also between the joints; then wrap it round with clay, except the upper part, which you must leave open to solder at; then take the powder of burras, and put it into wine or aqua-vitæ, and suffer it to dissolve, when dipping a feather therein, strike over the upper parts of the joints, and it will begin to smoak and hiss; the which ended, you may uncase it, and find it perfectly soldered.

*To solder warm, or rather hot, on iron or steel, &c.* Take gum water, beat it up with green herbs of any kind, till it become a paste, or of that thickness, and strike it on your metal, or lay it on the joint, rubbing soap over, at what time heat it, and it will prove a good cement, &c.

*To solder on copper, &c.* Take of copperas an ounce, half an ounce of orpiment or white arsenick, dividing it into 2 parts, and then make your copperas run with fire, then add one part of the arsenick, after you have spread it thin on a fine stone, add the other part; then beat it into powder, and use it as the solder for iron, &c.

*To solder latten a metal, or mixture of metals, so called.* Take a file, make the parts to be joined very smooth; then put them together, and being  
G
hot



hot, scrape your powder of burras, and keep it close till cool, and the joints will be fastened.

*To varnish like gold, tin, silver, or copper, &c.* Take an earthen pot well glazed, with a close lid to shut in, and put into it 6 ounces, or half a pint of linseed-oil, an ounce of aloëpaticum, and the same quantity of mallich, make them into a fine powder, and put them into the oil, and cover the former pot with a b gger; the first having a small hole in the top through both lids, the better to stir the materials, and having closed the outward pot about with clay, suffer it to stand over the fire till it boils up to the hole, then cool it; and when you would experiment it, polish your metal, and strike it over the metal, being indifferently warm; and so do it over twice, suffering it to dry between either time, and the business will be effected.

*To lay gold on iron, a brief and easy way.* Take liquid varnish one pound, and oil of linseed and turpentine, each an ounce, mix them well together over a gentle fire, and lay them on a ground whereon to gild with leaf-gold, &c. laying the varnish very thin, and suffering it to dry.

*Another easy way to gild on metal, &c.* Take off gum-arabick, and bole armoniack, each an ounce, put them into an earthen pot with a good close cover, set it over a gentle fire, and when they are warm, put in 2 ounces of linseed-oil, and when they come to a varnish thickness, lay them for a ground as the former, and on them the gold, &c. observing for the better splendor, when it is dry to polish it.

### C H A P. III.

*Directions for cleansing, colouring and perfuming of Gloves; the Way to scower Ribbands without much impairing the Colour; the method of washing, starching, &c. Silks, as Lutestrings, Lawns, Tifanies, Sarcenets, &c. with other matters of curiosity.*

*Foul Gloves to cleanse without wetting.*

**T**AKE your gloves and lay them upon a clean board, and make a mixture of Fulling-earth and powder of allom very dry, and pass them over on every side with an indifferent stiff brush; then sweep off that, and sprinkle them with bran and whiting a considerable time; and so dust them well, the which if they be not extraordinary greasy, will render them clean as at first; but if they be greasy, you must take out the grease with crumbs of toasted bread, and powder of burnt bone; then pass them over with a woollen cloth dipped in fulling earth, or allom powder; and so you may cleanse them without wetting, which many times shrinks and spoils them.

*To colour Gloves.* Take your colours suitable to your invention; if dark, take Spanish brown and black earth; if lighter, yellow oker and whiting, and so of the rest; mix them with a moderate size, and daub the gloves over with the colour wet, and so suffer them to hang till they dry by degrees; then beat out the superfluity of the colour, and smooth them over with a stretching or sleeking stick, reducing them to their proper shape.

*To make an excellent perfume for gloves.* Take amber-grease a dram, civet the like quantity, orange flower butter a quarter of an ounce; and with these well mixed and ordered, daub them over gently with fine cotton-wool, and so press the perfume into them.

*Another good perfume on the like occasion.* Take of damask, or rose-scent, half an ounce, the spirit of cloves and mace, of each a dram, frankincense a quarter of an ounce, mix them together, and lay them in papers between your gloves, and being hard pressed, the gloves will take the scent in 24 hours, and hardly lose it afterward.

*To cleanse cast Ribbands, &c.* Take your ribbands

and smooth them out, having sprinkled them a little before with fair water ; then lay them on a carpet or clean cloth at full breadth, and having made a thin lather of castile soap, go over them gently with a brush or fine woollen cloth ; then having in readiness water, wherein a little allom and white tartar has been dissolved, go over them till you see them clean ; and so they will not only be clean, but the colour will be fixed from further fading, if you suffer them to dry in the shade, and then smooth them with a glass slick stone.

*To wash black and white sarcenets the best and surest way.* Lay these smooth or even upon a board or carpet, spreading a little soap over the dirty places ; make a lather with castile soap, and having an indifferent fine brush, dip it therein, and pass over the silks the right way, viz. longways, and repeat so doing till you perceive that side is sufficiently scoured ; then turn the other, and use it in the same manner ; whereupon take it up, and put it into fair water scalding hot, suffering them to lie till such time as you have prepared cold water, wherein a small quantity of gum arabick has been dissolved ; as also if for white sarcenet, smalt, into which you must put them and rinse them well, that done, take them out, and fold them, clapping or pressing out the water with your hands on a carpet that is dry, keeping them under your hands in the like manner, till you find them indifferent dry ; at what time in case of the white, you must have brimstone ready to smoak or dry it over, till it is ready for smoothing, which must be done on the right side with a moderate hot iron.

*To wash and starch tiffanies, &c.* In this case the hems of your tiffanies must in the first undertaking be only soped a little ; as also the lace, if any be on them ; then having a lather of soap, put them into it hot, and gently move them with squeezing only, and



and not too roughly rubbing them, least they break or crumple overmuch; and when you find they are pretty clean, rinse them in warm water, in which a little gum-arabick has been dissolved, keeping them as much from the air as possible; this done, make starch of a reasonable thickness, blowing it as you see convenient, adding a little lump of allom to be dissolved therein; and when it is boiled to a convenient thickness, strain it, and during its being hot, wet your tiffanies therewith gently, doing it with a soft linen rag, and fold them up in a clean linen cloth, pressing them therein till they are somewhat dry, after which clap them between your hands near a good fire; and so finish the drying them over brimstone, and shape them to your purpose, and either sleek them over, or gently iron them.

Lawns may in the manner of the former be ordered; only observe to iron them on the wrong side, and using gum-arabick water instead of starch, and according to what has been directed for black sarcenet, any coloured silks may be ordered, abating or augmenting as you think fit (according to the stiffness or limberness intended) your gum-water.

*To wash and starch point-lace.* Have a tent prepared, fix the lace in it, and draw it pretty strait, then having a lather of cattle soap pretty warm, with a fine brush dipped therein, rub over your point gently; and when you perceive it clean on the one side, do the like on the other; then cast fair water, in which a little allom has been dissolved to take off the suds; at which time having very thin starch, go over with the same on the wrong side, and on the same side, iron it when dry; so with a bodkin open it, and set it in order.

*To clean point-lace, if not over dirty without washing.* Fix it in a tent as the former, and go over  
 G 3 with

with fine bread, the crust being pared off, and when it is done, dust out the crumbs, &c.

*For tanning of Leathers:*

*For upper leathers.* When they come from the butcher they must be put in water a day and a night, and if they be dried 3 days, or thereabout, until they be soft, brush them once or twice on the beam to take off the flesh; this done, take fair water, and put it in a tub, and thereunto put broom cut small every second or third day; to wit, to the quantity of 6 or 8 quarts of water, put about a gallon of broom, or a good hatful. This must be done 3 times, so that in 6 or 9 days your liquor will be prepared. Then take out all the broom out of the liquor wherein you are to put your hides, as many as your liquor will cover; and you must draw them up and remove them from their posture once a day, or once in two days at the farthest; so that they will be ready to have the hair taken off in 8 or 10 days time, according to the strength of the liquor. Then make another liquor of about the same quantity, whereunto you must put about half a bushel of pigeon's dung, and therein let your hides lie four days: every day taking them out to work them one day on the flesh-side, and the other day on the grain side alternately. Take the same quantity of fair water, whereupon you must put a gallon of bark beat to powder, on one day, and the next day as much; which done, the third day you may put thereunto your skins, removing them 3 or 4 times the first day, casting in every time a handful of bark; the next day doing the same once a day only, and this for 5 or 6 days; and when you see the liquor become white, then you must make a new liquor directly as the former, but you need not stir them in this liquor but once in 4 or 5 days, which will last longer than the first, but when it comes white also,

it must be renewed as the other, which is thus to be done: Having taken out your skins, put in as much bark as you did at first for the two days, and so renew your liquors until the skins be tanned thoroughly, which, ordinarily speaking, will be six weeks or two months.

*For Sole-Leather.*

As they come from the butcher, take them and sprinkle them on the hair-side with ashes, the flesh-side being composed as it was on the back of the beast; and so being sprinkled, fold it up as you have sprinkled it, until no part of the hair-side be left without ashes, and so keep it in a roll till the hair will easily come off, which is ordinarily in 3 or 4 days, if it be kept warm. When the hair is off, cast it into water until the next day; then flesh it and work it also at the same time on the grain-side, which being done, put it into an ouse, or bark liquor, strong or weak it is all one, but the space of 3 hours, and stir it and remove it up and down for the said time twice an hour. Then take 4 or 5 pots of water, into which you must put a bushel or thereabouts of rye-meal scalded in a great kettle of the said water, and when it is scalded and stirred in the boiling water, put it into the rest of the water in a vessel, and let it stand until it have a white cream on it, and work in bubbles, which will be six or eight days; then put the said hydes or backs into the said liquor for the space of 4 or 5 days, handling or removing them once a day.

*Another way for tanning upper leathers.*

First take the hide, be it green or dry, and put it into water for 8 days, every day taking it up, and put it down again the water without working it till the last day, then flesh it. Then put it into a peck of English measure of Lime (which quantity will serve for any hide) for the space of seven weeks;



weeks ; but the whole peck must not be put in at once, but half of it to about 4 buckets of water, in which it must lie 3 weeks, and then hair it with a shovel, &c. Then the other 4 weeks let it lie in the like quantity of water and lime, which done, flesh it over again ; then put it into a liquor made with fresh water and hens dung (a peck of which will serve 10 hides, and so proportionably) wherein it is to lie 8 days, and handled up every day once, and then work it well out thereof, and grain it, which done, put it into an ouse made with half a bushel of bark and water for one hide, and so proportionably, wherein it is to remain 8 days, but every day twice or thrice handled that is, taken up and put down again ; then put it in a fresh ouse made as before, and there let it stay a month without handling, and so continue 3 months more in the same manner, renewing each month your ouse.

*For Sole Leather.*

The same order is to be observed as above, but only the sole leather must lie longer by 8 days at least in the lime, and not so long by 2 or 3 days in liquors made with hens dung, and it needs not to be so often handled as the upper in the first ouse, and have 2 ouses at the least, or 3 more than upper leathers.

*Note.* That if there be many hides together, there needs not the full proportion to each, as when there is but one.

*The art of japanning and painting in oil.* You must furnish yourself with these things following: strainers, timnells, pencils, varnish, divers kinds of bristles, feathers, hair, shells and gally-pots to mix colours and minerals in ; gums of divers sorts, gold, brass dust green, leaf silver, leaf-gold, dragons blood, copper and tin finely powdered, varnishes of divers kinds, &c.

Now

Now let the wood that is to be japan'd, be smooth, dry, and of a firm grain, free from knot and greasiness; thus prepared, lay the groundwork of your colour, whether black, red, or whatever colour you please; let them be laid even, and in all parts alike with a bull-rush, often drawing it forward and backward, whilst the work is set over a gentle heat, as a chaffing dish of charcoal, or the like; but be sure let it not be so hot as to blister the work, or make it shrink, for that spoils all, and you must begin again. If you patch it, it looks unsightly, and it must have time to dry, betwixt every laying on of the varnish; so it being well dry'd and smooth, in lay, always begin in the middle of the board or table, then with your large pencil carry the strokes from thence to one end, then in the middle fix it again, and so continue till all the work is covered; and keep your hand steady on the edges, that you do not overlap them, so that the varnish may not splash nor hang upon them, and this you may avoid by drawing the pencil or brush once or twice against the gally-pot side.

Now to proceed, when your work is dry, dip a rag in fine tripoly, sifted and powdered like meal, and rub it over with that and polish it, pressing pretty hard with the rag, and carry a steady hand, till by degrees the whole is polished, and a bright shining gloss is set on it; and if you cannot do this at one time, then omit a day or two, and then proceed; but observe that you do not rub harder in one place than in another, to make the work appear unequal, and to prevent inequality, lessen your quantity of tripoly, as the work comes nearer finishing, and when it is dusted as well as may be, wipe off what remains with a wet sponge, and with a dry cloth take the wet quite away, then in a fine mixture of lamb-black and olive oil rub it

over,

over, and take off that rubbing or blackning with another dry cloth, and it sets a better gloss on it. But if your japanning is white, carry a very gentle hand over it, and cleanse with flour that is fine, mixed with sweet-oil of olives, and this may serve for a general direction.

*To order a black piece of japanning.* Take varnish of seed-lack, and lamp-black, a sufficient quantity to make a curious black, mix it well, and over a gentle heat, when the wood is warm'd, as before is directed, go 3 times over it, and betwixt every going over with the varnish, let it dry, and carry a bull rush over it smoothly, holding one hand at one end, and the other at the other, to make it equally smooth; having done this, mix of the thickest seed-lack a quarter of a pint, with an ounce of *Venice* turpentine; let them be well mixed, then add more black to deepen the former, and with your brush go over six or seven times, letting it dry betwixt every going over; when you find it is very smooth, let it stand to dry well, which will be in 3 or 4 days, if fair weather, or else it may be six; then take a rag dipt in water, and thickened with fine tripoly, polish it several times every other day, and when done effectually, wash it off with water and a sponge, the water being well soak'd up with a fine dry rag, go over it with oil and lamp-black, and it will set a jet shining gloss on it.

*To make a murray, or olive colour'd japanned work.*

Take two parts of yellow oker to one part of vermilion finely powdered; mix them well with the thickest seed-lack varnish; after the first going over, thin the colours with a little varnish of shell-lack, and let it dry well between whiles, go four times over it, rubbing it smooth, when the colour is laid on in a full body, then wash it over nine times with seed-lack, ordinary varnish, and rub it again;



again ; when dry, which will be in four days, clear it with tripoly and polish with oil of Lamp black.

And thus by taking care to proportion colours with varnish, you may japan any colour, or speckle with brass, copper, gold or silver. But for trees, flowers, birds and beasts, or any figure varying from the colour of the ground work, they must be finely drawn with a pencil, in colours mixt with proper varnish, when a strong ground work is laid, yet you must draw them so even and smooth, that no part may rub off in polishing, when other goings over of varnish has secured them, and then they will look very lively, as if inlaid in the wood, tho' they may be painted when the piece is polish'd and varnish'd over with a fine varnish. But they will not then look so glittering ; thus you may speckle with any mineral of hardness, paint landships, rivers or trees, sun or moon, &c. on tables, cabinets looking glasses, &c. with ease and pleasure.

*To limn or paint in oil or water colours.* The most material thing is to mix your colours, in order to which observe the rules following.

Red lead, lake and vermilion, a small quantity makes a fine deep scarlet.

Red led and masticote, heightened with a little whiting, makes a curious flame colour, white and lake, a murrey colour.

Spanish-brown and white, makes a good hay-colour.

Indico, white, and spanish-brown, a good purple.

Smalt and pink heightened with white, makes a light green, or with little or no white, a deeper green.

Indico and white make a lead or sad colour.

Indico, lake and white lead, a violet colour.

But as for simple colours useful in this work, they are as follows.

Blacks

Blacks lamp black, earth of collen, cherry-stone black, sea-coal-black and ivory-black.

Greens, verdigrease, verditer, terrevert.

Yellows, oaker, pink, masticote, spruce, pink, or piemont.

Reds, indian, vermilion, red ornatto and lake.

Whites. White lead.

Blue. Indico, smalt, ultramarine. There are colours also that you must be knowing in before you can hit them right.

And these are spanish brown, burnt spruce, and umber.

Also take notice that ivory, cherry-stones, umber and oaker must be burnt e'er they'll grind; but masticote, vermilion and ultramarine, or piemont and smalt may be tempered without any grinding. A crucible is best to burn them in, and let them not be over-burnt lest they lose their colour.

Oils usual in this art, are linseed oil and oil of walnuts, the latter is best for drapery.

Now having many pencils of various sizes, strain your cloth upon a frame very tight, and being prepared for drawing with pencils of red lead, *French* chalk, or fallow-wood burnt to a coal, and sharpened as a pencil, take care you draw your out-stroaks in just proportion, with pens of hard, small quills, as those of ravens or crows; it is also necessary you be furnished with a three-footed compass, to take in and out as the case requires; one of them of white or black lead, another of red chalk, another of indico, or hard colour differing from the former. With these you are to mark out the equal distance after you have drawn your out-stroaks.

your ownelves; know ye not your ownelves, how that  
"Christ is in you, except ye be reprobates?" 2 Cor. xiii. 5.  
Oh, poor dying mortal! will you try if you have been gathered to Shiloh, or not? Whether you have got into him by a faith of his own operation? For according as this takes place, so will it fair with you through all eternity. If you die out of Christ, or in unbelief, you *die in your sins*, John viii. 24. And better die in a ditch, and die like a dog, than die in your sins. If you die in your sins, you will rise in your sins, and stand before the tribunal of God in your sins, and so be condemned. If you be gathered to Christ, you would be found in him, and so found happy, when death, judgment, and eternity, appear; therefore I exhort you solemnly to reflect upon this matter, whether you be gathered, or not. If all that you are worth in a world as noticed on a former occasion, lay in one precious stone, and that stone were to be tried by a skilful jeweler, whether it were true or false, whether it would fly, or endure under the smart stroke of his hammer; surely, your thoughts would not be unconcerned about the issue of such a trial. Why, man, woman, all that you are worth in this world, and the world to come, depends upon this matter, whether you be of the people that are gathered to Shiloh, or not. Try whether your faith in the promised Shiloh, will fly, or endure the stroke of the hammer of God's word: have you no concern in this matter? You would be loath to put to sea, though it were but to cross a narrow ferry, in a rotten leaky vessel; and will you dare to venture on the ocean of eternity, in a false rotten barque? Whatever profession you have, whatever blaze you make, whatever esteem others may have of you, whatever opinion you may have of yourself, and of your faith, you will be drowned forever in the deluge of God's wrath, if you be not gathered into the ark, Jesus Christ: I would therefore offer you some helps to make this trial. And here all that I said, on the fourth general head, concerning the *means* and *manner* of this gathering; how God acts in gathering, and how he makes the soul to act, might be brought in; but leaving all these, I offer these few following marks, by which you may try whether or not, you have ever been gathered to Shiloh.



shall the glory of our whole salvation, from first to last, be long. Christ is much robbed of his glory in Britain, at this day; damnable Arian doctrine is spreading, whereby Christ is robbed of the glory of his supreme deity, denying his being the eternal Son of God, co-equal, and co-essential with the Father. The devil himself was more orthodox than our Arian doctors, when he owned, Matth. viii. 29 that Christ was the Son of God; *What have we to do with thee, Jesus, thou Son of God?* The devil spoke more honourable to him, than they do, when he said, Mark i. 24 *I know thee who thou art, the holy one of God.* My text leads me to what I am saying; for, if Christ were not the supreme God, equal with the Father, the gathering of the people to him, to believe in him, to worship and adore him would be unlawful; it would be idolatry. For, as *the Lord our God is one Lord*; so, we must *worship the Lord our God, and him only must we serve*: and it is idolatry to worship any other. Yea, to the Son, he says, *Let all the angels of God worship him*: and for this end, must all the people be gathered to him. My present work allows me not to trace the other doctrines, that rob him of his glory, and tend to lead people elsewhere than to Shiloh: Only, whatever mask of truth or holiness, any doctrine shall put on, if it tend to gather people to Moses, and not to Shiloh; or to lead them to the law, and not to Christ, who is *the end of the law for righteousness to every one that believeth*, it favours not of the truth as it is in Jesus, Eph. iv. 21. — But the main inference I designed at present, was for exhortation; and therefore, passing all other inferences that might be drawn, I come to apply it.

*Secondly, For exhortation.* And I design, as the Lord may pity and assist, to direct it to three sorts of persons with relation to this gathering of the people to Shiloh. 1. Some may be *doubtful*, whether they were ever gathered to Shiloh, or not; therefore I would exhort them to try. 2. Some may be sure they were *never* yet gathered to Shiloh; therefore I would exhort them to gather under his wings. 3. Some are believers, that have through grace *been gathered* by him and made to gather to him; and I would exhort them to their duty, with respect to their *future gathering* to him.

1<sup>st</sup>, Some may be *doubtful*, whether they are ever gathered there





